A REVISION OF THE PLATYSEIINAE (MESOSTIGMATA: ACEOSEJIDAE) BASED ON MATERIAL IN THE COLLECTIONS OF THE BRITISH MUSEUM (NATURAL HISTORY)

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Pp. 25–101, 204 *Text-figures*

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CONTENTS

INTRODUCTION

The family Aceosejidae is divided into two subfamilies, Aceosejinae and the Platyseiinae, on the basis of the chaetotaxy of the gnathosoma and the tarsi of legs II–IV (Evans, 1957). The classification of the Aceosejinae has been outlined by Evans (1958) but no revisionary work has yet been undertaken on the Platyseiinae which, at present, contains six genera, namely, *Sejus* C. L. Koch, 1843, *Cheiroseius* Berlese, 1916, *Platyseius* Berlese, 1916, *Episeius* Hull, 1918, *Zerconopsis* Hull, 1918, and *Episeiella* Willmann, 1938.

Koch (1836) originally assigned a number of species to the genus *Sejus* but did not designate the type species of the genus, *Sejus viduus* C. L. Koch, until 1843. Berlese (1892) accepted Koch's wide concept of the genus and in 1913 proposed the family Seiidae for its reception together with eight other genera. Later in 1916, the same author revised his concept of the Seiidae and stated that *Seius* (=*Sejus*), with *Sejus togatus* C. L. Koch as the type, was not confamilial with the other genera he had included in the family in 1913. Thus, the family Seiidae was reserved for those species having the general characteristics of *Sejus togatus*. Subsequent workers (Vitzthum and Trägårdh) accepted Berlese's definition of *Sejus* and the family became established in the literature until 1936 when Oudemans noted the error in considering *S. togatus* to be the type of *Sejus*. Consequently *Sejus* Berlese *nec* Koch became a synonym of *Liroaspis* Banks in spite of Trägårdh's remark that " this incident offers yet another strong argument in favour of establishing *nomina conservanda* " (Trägårdh, 1946). We are following Sellnick (see Willmann, 1953)

who considers *Epicrius corniger* Berlese (1891) to be a synonym of *Sejus viduus* C. L. Koch. According to our generic concept *Cheiroseius*, *Episeius* and *Episeiella* are synonymous with *Sejus*.

The present revision of the Platyseiinae is based on material in the Collections of the British Museum (Natural History). The major collections were made by the late A. H. G. Alston (Indonesia), P. F. Bellinger (Jamaica), Miss T. Clay (Sikkim), G. Owen Evans (Uganda), K. H. Hyatt (Nepal), P. Wygodzynsky (Argentina) and M. E. Bacchus, P. N. Lawrence and J. T. Salmon (British Isles). The type material, unless otherwise stated, is deposited in the British Museum (Natural History).

EXTERNAL MORPHOLOGY

Gnathosoma

The chelicerae are chelate-dentate in all postembryonic developmental stages and show a marked uniformity in shape and dentition throughout the subfamily. The

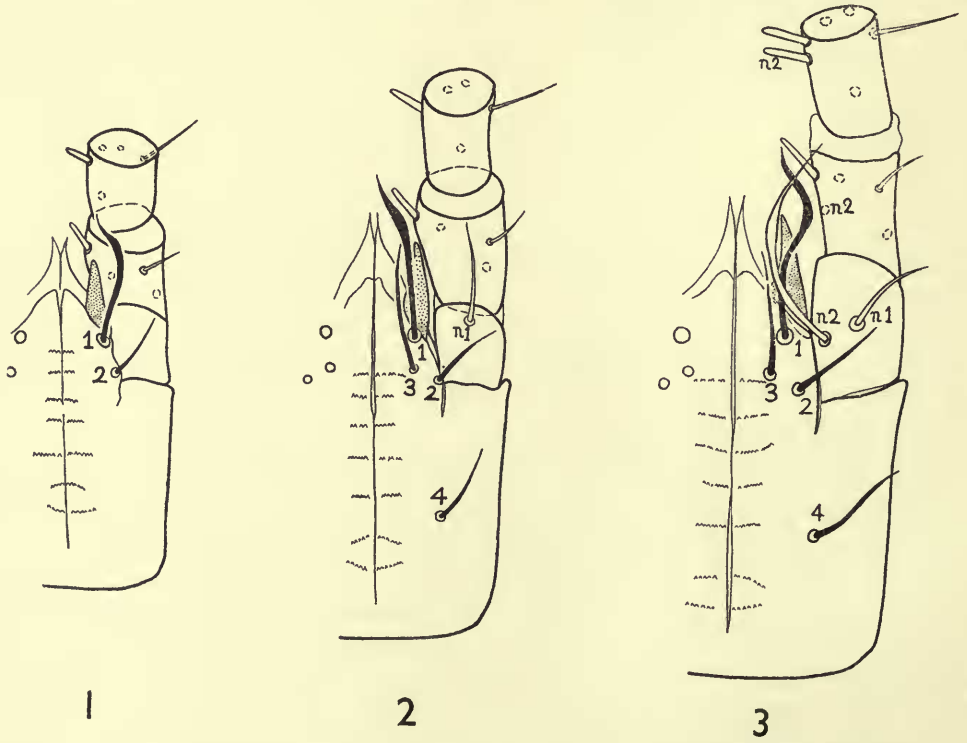
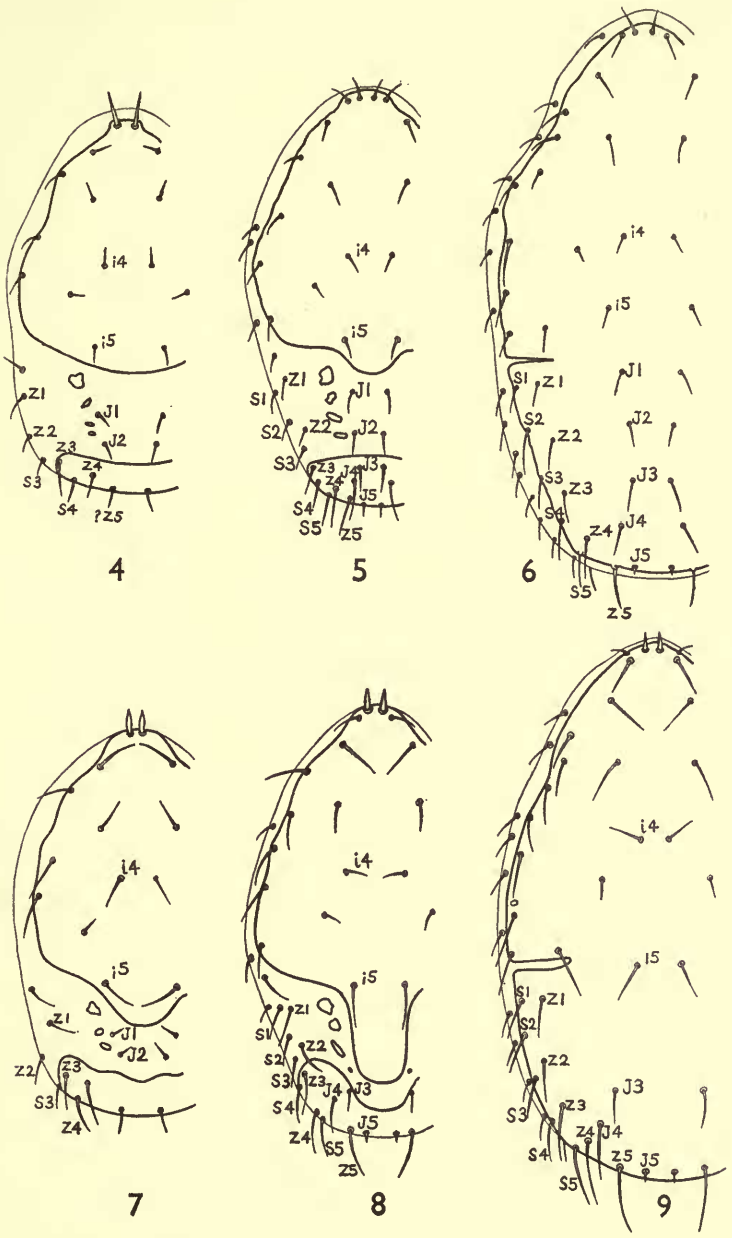


FIG. 1–3. Chaetotaxy of the venter of the gnathosoma and palptrochanter, femur and genu in the larva (1), protonymph (2), and deutonymph (3) of *Plesiosejus italicus* (Berlese).

1, rostral setae ; 2, external posterior rostral setae ; 3, internal posterior rostral setae ; 4, capitular setae ; n2, setae appearing in the deutonymph.



FIGS. 4–9. *Sejus necorniger* (Oudemans), dorsum of larva (4), protonymph (5), and deutonymph (6).

Plesiosejus italicus (Berlese), dorsum of larva (7), protonymph (8), and deutonymph (9).

spermatophoral process on the movable digit in the male shows considerable interspecific variation in form (e.g. Text-figs. 33 and 41) and appears to be a useful taxonomic character. In all stages the processes from the arthrodial membrane at the base of the movable digit are simple and setiform.

The postembryonic development of the chaetotaxy of the venter of the gnathosoma and of the three basal movable segments of the pedipalp is typically parasitoid (Text-figs. 1–3). The rostral setae (1) in the immature stages and in the adults are long and usually whip-like as are the internal palptrochanter setae which appear in the deutonymph. (This characteristic structure of these two pairs of setae is a useful character for separating the platyseiines from the closely related aceosejines). The corniculi are simple and the specialized seta at the inner basal angle of the palptarsus is two pronged. With the exception of *Sejus clayi* sp. nov., the tectum is basically tridentate with the processes subequal in length and inconspicuously divided distally (Text-figs. 28, 32 and 76). In *S. clayi* the median process is extremely long and Y-shaped with the lateral processes relatively shorter (Text-fig. 117).

Idiosoma

The idiosoma is usually elongate-oval in outline although in *Platyseius* it may be subcircular.

Dorsum : the dorsum of the larva has two weakly sclerotized shields. In *Sejus* and *Plesiosejus* the anterior shield bears nine pairs of setae and the pygidial four pairs[1] (Text-figs. 4 and 7). The striated cuticle between these sclerotized areas carries two pairs of J setae (J1 and J2), three pairs of Z setae (Z1–Z3) and one pair of S setae (? S3). Three or more platelets are also present on the cuticle. We have seen three main types of protonymph which chiefly differ in the chaetotaxy of the posterior half of the dorsum. All have an anterior shield with eleven or twelve pairs of setae and a pygidial shield. In the *Sejus*-type (Text-fig. 5) there are five pairs of setae in the J series ; J1 and J2 being situated on the cuticle between the anterior and pygidial shields. The protonymphs of both *Platyseius* and *Plesioseius*, on the other hand show a deficiency in the chaetotaxy of the J series. The former have only two pairs in the J series (J4 and J5) and the latter three pairs (J3–J5). There are no setae of the J series present on the cuticle between the anterior and pygidial shields in these genera (Text-fig. 8). All the deutonymphs we have examined have a laterally incised dorsal shield which almost entirely covers the dorsum of the mite. The chaetotaxy of the " anterior dorsal shield " (the region anterior to the incisions) is relatively constant but the number of setae on the " posterior shield " which is largely determined in the protonymph shows considerable variation. Four types may be readily recognized :

1. *Sejus*-type : J, Z and S series each with five pairs of setae (Text-fig. 6).

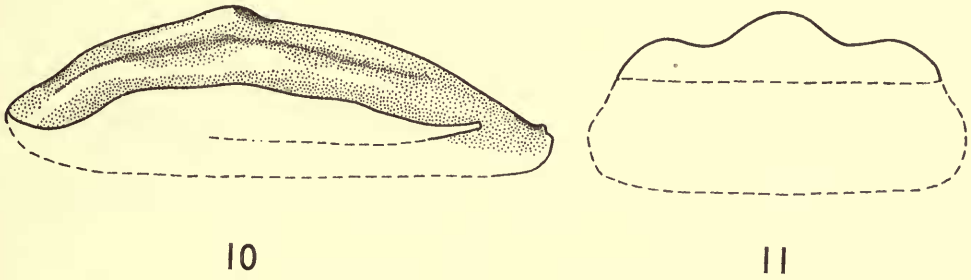
[1] The system of nomenclature for the dorsal chaetotaxy follows that proposed by Sellnick (1944) and added to by Hirschmann (1957). The latter author has used one system of nomenclature throughout the suborder and by so doing has attempted to homologize setae in widely differing groups. This may be possible in the larval stage but becomes increasingly difficult and purely subjective in subsequent developmental stages because of the increased number of setae, especially in those forms exhibiting hypertrichy.

2. *Zerconopsis*-type : J and Z series each with five pairs, S series with four pairs.

3. *Platyseius*-type : J series with two pairs (J4 and J5), Z and S series each with five pairs.

4. *Plesiosejus*-type : J series with three pairs (J3–J5), Z and S series each with five pairs (Text-fig. 9).

The dorsal shield in the adults is entire except in *S. clayi*, *Zerconopsis labradorensis* sp. nov. and *Zerconopsis muestari* (Schweizer) which retain the deutonymphal incisions and *Sejus ornatus* sp. nov. which has wide incisions between S2 and S3 (Text-fig. 168). The chaetotaxy of the " posterior dorsal shield " is essentially the same as in the deutonymph so that the above four groups may also be recognized in the adult. The surface of the shield is invariably reticulated and the majority



FIGS. 10–11. Dorsal shield of *Plesiosejus italicus* (Berlese). Fig. 10, lateral view. Fig. 11, transverse section.

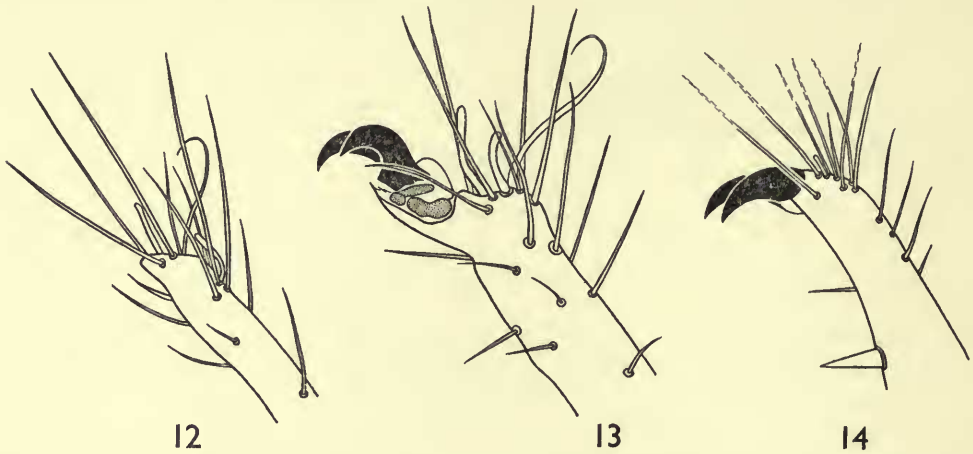
of the species have a median longitudinal ridge (Text-figs. 10 and 11). The position of the highest point along this ridge varies throughout the group. It is usually located in the region of setae I4–J2 but in some species it may appear as a distinct tubercle between J4 and J5. The extreme attenuation of the posterior margin of the anterior shield in the protonymph of *Plesiosejus italicus* (Berl.) may be due to the development of the median ridge (cf. Text-figs. 8 and 36).

Venter : The tritosternum is well developed in all stages and in the adult comprises a long slender base and a pair of strongly pilose laciniae. Pre-endopodal shields may be present in some species.

The development of the chaetotaxy of the intercoxal region is normal ; the larva having three pairs (homologous with sternal setae I–III in the adult), the protonymph four pairs (homologous with sternal setae I–III and the genital setae in the adult) and the deutonymph five pairs (the extra setae appearing at this stage being homologous with the metasternals in the adult). The female has a strongly sclerotized sternal shield bearing three pairs of setae and the metasternals are normally situated on discrete platelets.

The genital shield is wedge shaped and except in *S. clayi* and certain species of *Zerconopsis* has a pair of setae. A sterniti-genital shield is always present in the

male although it may show various degrees of fusion with the ventral shield. The genital orifice in this sex is located near the anterior margin of the sterniti-genital. The larva has an anal shield usually with a seta on each anal valve in addition to the normal three setae present on the shield. There is a tendency for increased sclerotization of the anal region in subsequent developmental stages so that the protonymph and the deutonymph may have a ventri-anal shield (an anal shield with usually one pair of preanals). All the females of the platyseiines we have examined have a ventri-anal shield with from one to four pairs of pre-anals. Members of the genus *Platyseius* in addition have two or more pairs of setae situated in the posterior half of the shield (Text-fig. 23). The ventri-anal shield in the male shows varying degrees of fusion with the sterniti-genital shield and with the dorsal shield (Text-figs. 19 and 31).



FIGS. 12–14. Tarsi of leg I showing development of ambulacra. Fig. 12, *Sejus viduus* C. L. Koch. Fig. 13, *Sejus laelaptoides* (Berlese). Fig. 14, *Sejus unguiculatus* (Berlese).

The larva lacks stigmata and peritremes but the protonymph has a pair of stigmata located ventro-laterally between coxae III and IV and short peritremes. In the deutonymph, the peritremes are well developed and extend beyond the anterior margin of coxae I. The peritrematal shields at this stage, however, are weak and inconspicuous. The adults have large peritrematal shields; these are invariably fused with the expodals and extend posterior to coxae IV (Text-fig. 16). Many species have a strong poststigmatic prolongation of the peritreme.

Legs: All the legs are usually long and slender. The structures of taxonomic importance are the form of the ambulacrum and the chaetotaxy of tarsi II–IV. The ambulacrum of leg I shows varying degrees of development. In a few species it is lacking (Text-fig. 12) but generally it comprises a lobate pulvillus and two claws. The claws may be minute or relatively large and conspicuous (Text-fig. 13). A short pretarsus is usually present; a notable exception being *Sejus unguiculatus* (Berl.) in which the large claws on tarsus I are sessile (Text-fig. 14). The ambulacra

of legs II–IV are well developed and each consists of a pair of claws and a lobate pulvillus. In the majority of the platyseiines, the median and lateral lobes of the pulvilli are slender and markedly acute—a probable adaptation for movement over a moist substratum. Tarsi II and III and usually IV have a pair of characteristic lanceolate setae (Text-fig. 18). Leg II in the male is never crassate or armed with spurs.

CLASSIFICATION

The characters previously used in separating the genera of the Platyseiinae, e.g. the outline of the idiosoma, the presence or absence of an ambulacrum on tarsus I and the form of the peritreme, are undoubtedly of some value in the practical classification of the subfamily but have no phylogenetic basis. We have concluded from our investigations of the external morphology of the group that the chaetotaxy and form of the dorsal shield in the adult and immature stages afford the most satisfactory characters for a natural classification. It is interesting to note that the variation in the form and in the chaetotaxy of the dorsal shield already noted for the Aceosejinae (Evans, 1958) is also evident in the Platyseiinae. Thus, there is a tendency towards the reduction in the number of the J and S setae on the " posterior dorsal shield " and towards the retention of the deutonymphal incisions. Our generic concept has as its basis the chaetotaxy of the " posterior dorsal shield " which has been discussed above.

Subfamily PLATYSEIINAE

Platyseiinae Evans, G. O., (1957), *J. Linn. Soc. Lond.* (*Zool.*), **43** : 244.

Aceosejids with the rostral and internal palptrochanter setae long and usually whip-like. Tarsi II and III with a pair of long lanceolate setae about the middle of the segment (Text-fig. 18). Dorsal shield in the adults entire, rarely with lateral incisions. " Posterior dorsal shield " normally with fifteen pairs of setae ; when fewer setae are present the J series or S series comprises less than five pairs. Females with sternal shield bearing three pairs of setae, a wedge-shaped genital shield with or without a pair of setae and a ventri-anal shield with one or more pairs of preanals. Male with sterniti-genital and ventri-anal shields, the latter often being partially fused with the dorsal shield. Both sexes with or without poststigmatic prolongation of the peritreme. Chelicerae chelate-dentate in both sexes ; movable digit with spermatophoral process in the male. Tectum basically three pronged. All legs usually slender ; leg I with or without ambulacrum, legs II–IV with pulvilli (often acutely lobate) and two claws. Leg II unarmed in the male.

KEY TO GENERA—ADULTS

1. " Posterior dorsal shield " with 5 pairs of setae in the J series (Text-fig. 53) . . 2
—" Posterior dorsal shield " with only 2 or 3 pairs of setae in the J series (Text-figs. 15 and 36) 3

2. " Posterior dorsal shield " with 5 pairs of setae in the S series (Text-fig. 53) ; dorsum never with paddle-like setae ; peritreme often with a strong poststigmatic process (Text-fig. 54) ; median lobes of the pulvilli of ambulacra II–IV usually acuminate (Text-fig. 58) . . . . . *Sejus* C. L. Koch (p. 49)
—" Posterior dorsal shield " with 4 pairs of setae in the S series, ? S2 situated on the lateral integument (Text-fig. 179) ; dorsal shield with three or more pairs of paddle-like setae, remainder of dorsal setae simple (Text-fig. 184) ; peritreme without poststigmatic prolongation ; median lobes of the pulvilli of legs II–IV rounded apically (Text-fig. 202) . . . . . *Zerconopsis* Hull (p. 91)
3. Both sexes with three pairs of setae in the J series (Text-fig. 36) ; idiosoma elongate-oval in outline ; ventri-anal shield in the female with 3 or 4 pairs of setae in addition to the paranal and postanal setae . . . *Plesiosejus* gen. nov. (p. 42)
—Both sexes with only 2 pairs of setae in the J series (J4 and J5) ; idiosoma usually subcircular in outline (Text-fig. 15) ; ventri-anal shield in the female with 5 or 6 pairs of setae in addition to paranal and postanal setae . *Platyseius* Berlese (p. 34)

Genus ***PLATYSEIUS*** Berlese

Platyseius Berlese, A., (1916). *Redia*, **12** : 42.

Platyseiine mites with the idiosoma usually subcircular in outline. Dorsal shield entire : " posterior dorsal shield " with J series comprising two pairs of setae (J4 and J5). Dorsal setae, with the exception of J5 in some species, long and simple. Sternal shield in the female with three pairs of setae ; metasternals situated on small plates. Genital shield wedge-shaped and with a pair of setae. Ventri-anal shield large and bearing 13 or 15 setae. Poststigmatic process of peritreme and peritrematal shield well developed and extending posterior to coxa IV. Male with sterniti-genital and ventri-anal shield, and ventri-anal shield showing varying degrees of fusion with the dorsal shield. Chaetotaxy of gnathosoma normal. Chelicerae chelate-dentate ; movable digit with spermatophoral process in the male. Tectum basically trispinate. All legs with ambulacra ; pulvilli of ambulacra II–IV acuminate.

Type species ***Lasioseius* (*Platyseius*) *capillatus*** Berlese, 1916

(= ***Hypoaspis subglabra*** Oudemans, 1902)

KEY TO SPECIES—FEMALES

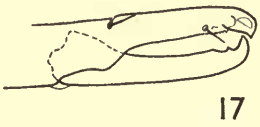
1. Setae i5 shorter than J4 (Text-fig. 15) ; ventri-anal shield with 13 setae ; pre-endopodal shields present. Europe . . . . *P. subglaber* (Oudms.) (p. 35)
—Setae i5 at least twice the length of J4 (Text-fig. 22) 2
2. Ventri-anal shield with 15 setae (Text-fig. 27) ; pre-endopodal shields absent. Jamaica . . . . . *P. jamaicensis* sp. nov. (p. 39)
—Ventri-anal shield with 13 pairs of setae (Text-fig. 23) ; pre-endopodal shields present 3
3. Setae on ventri-anal shield simple (Text-fig. 23) ; setae J5 thorn-like, smooth. Indonesia . . . . . *P. mollicomus* Berl. (p. 37)
—Two pairs of setae on the posterior half of the ventri-anal shield stout, spinose (Text-fig. 35) ; setae J5 short, brush-like. East Africa *P. spinosus* sp. nov. (p. 41)

Platyseius subglaber (Oudemans), 1903

Hypoaspis subglabra Oudemans, A. C., (1903). *Ent. Ber.*, **1** : 87 ; *Abh. nat. Ver. Bremen*, **18** : 88.
Lasioseius (*Platyseius*) *capillatus* Berlese, A., (1916). *Redia*, **12** : 43, syn. nov.
Lasioseius (*Platyseius*) *subglaber*, Halbert, J. N., (1923). *J. Linn. Soc. Lond.* (*Zool.*), **35** : 373.
Lasioseius (?) *listrophorus* Schweizer, J., (1924). *Arch für Hydrobiol.*, **15** : 131.

Female. Dorsal shield (560 μ × 361–477 μ) broadly oval ; ornamentation restricted to a number of small punctate areas. " Anterior dorsal shield " with

18



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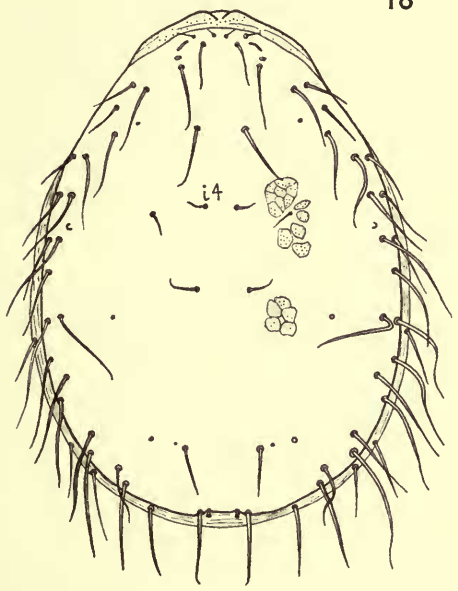

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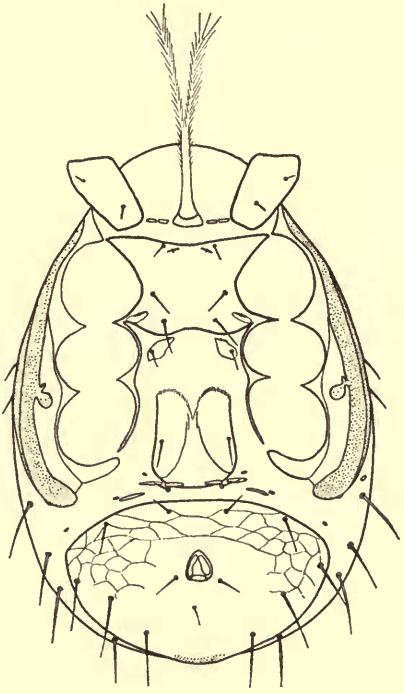
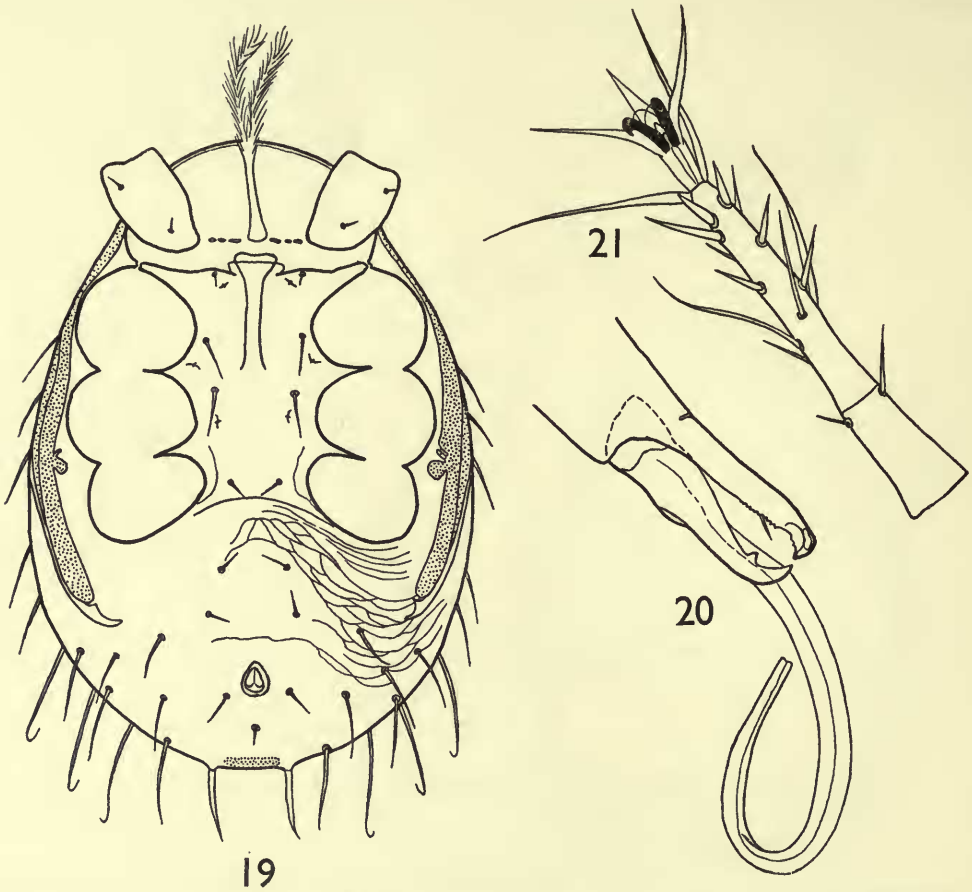


16

Figs. 15–18. *Platyseius subglaber* (Oudemans), female. Fig. 15, dorsum. Fig. 16, venter. Fig. 17, chelicera. Fig. 18, tarsus II.

nineteen pairs of simple setae ; verticals very fine and short (Text-fig. 15). " Posterior dorsal shield " with twelve pairs of setae ; J1–J3 being absent. Setae J5 short, palmate. The distribution and relative lengths of the setae on the dorsal shield and lateral interscutal membrane are shown in the figure.

Tritosternum large with a pair of strongly-pilose laciniae, and flanked at its base by two pairs of pre-endopodal shields. Sternal shield smooth and with three pairs of simple setae (Text-fig. 16). Genital shield wedge shaped and with a pair of setae. Ventri-anal shield wider than long (202–215 μ long $\times$ 280–360 μ wide), reticulated in its anterior half and bearing thirteen setae. Six small sclerotized plates are situated between the genital and ventri-anal shields. Stigma situated



FIGS. 19–21. *Platyseius subglaber* (Oudemans), male. Fig. 19, venter. Fig. 20, chelicera. Fig. 21, tarsus II.

between coxae III and IV; peritreme extending posterior to the stigma; peritrematal shield strongly developed. Metapodal shields apparently fused with the peritrematal shields.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged and typical of the genus. Dentition of chelicerae as in Text-fig. 17.

Leg I (670–772 μ long) with the tarsus (160–177 μ) considerably longer than the tibia (126–140 μ). Setae on tibia and tarsus fine, those on remaining segments stouter. Tarsi II–IV with a pair of long lanceolate setae. Ambulacrum of tarsus I short and claws small. Pulvilli of ambulacra II–IV produced into three long acuminate lobes (Text-fig. 18).

MALE. Dorsal shield (425–467 $\mu \times$ 340–371 μ) is similar to that of the female. " Anterior dorsal shield " with nineteen pairs of simple setae and " posterior dorsal shield " with twelve pairs of setae.

The tritosternum is flanked at its base by two or three pairs of small pre-endopodal shields. The remainder of the chaetotaxy and sclerotization of the venter is shown in Text-fig. 19.

The gnathosoma and tectum are similar to those of the female. The spermatophoral process is about three times as long as the movable digit of the chelicera. The dentition of the chelicera, and the spermatophoral process are shown in Text-fig. 20.

Leg I (602–682 μ long) has the tarsus (147–177 μ) considerably longer than the tibia (114–126 μ). The chaetotaxy of the legs is as in the female. The ambulacra of tarsi II–IV are provided with lanceolate pulvilli (Text-fig. 21).

DISTRIBUTION. This species is widely distributed in western Europe. In Great Britain we have examined specimens from Cumber Park, Nottinghamshire (coll. G. O. E., April, 1955), Dungeness, Kent (coll. D. A. Chant, July, 1955), Box Hill, Surrey (coll. E. Duffey, 30.vi.1951), and St. Agnes, Isles of Scilly (coll. K. H. H., September, 1957).

Platyseius mollicomus Berlese, 1916

Lasioseius (*Platyseius*) *mollicomus* Berlese, A., (1916). *Redia*, **12** : 43.
Platyseius mollicomus, Vitzthum, H. G., (1931). *Arch. für Hydrobiol.*, Suppl., **9** : 70, figs.

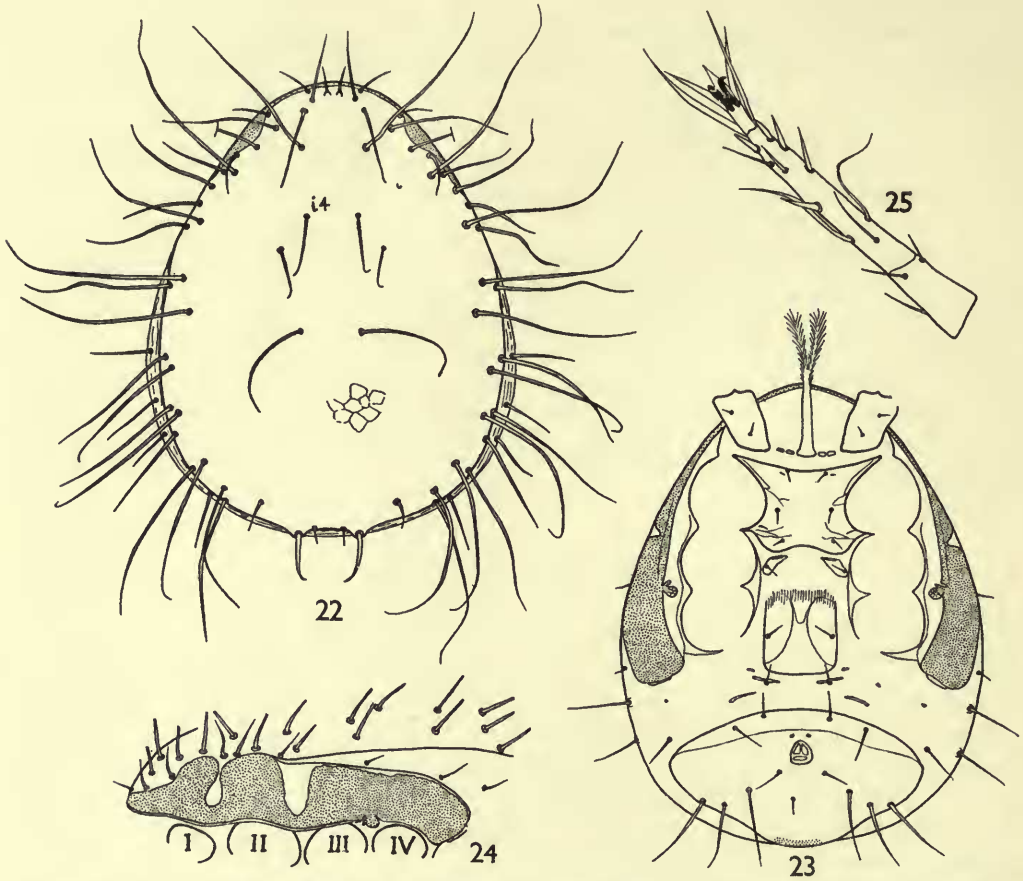
FEMALE. Dorsal shield (570–580 $\mu \times$ 467–480 μ) broadly oval in outline; ornamentation restricted to a number of faint reticulated areas. " Anterior dorsal shield " with twenty-one pairs of simple setae (Text-fig. 22). " Posterior dorsal shield " with twelve pairs of simple setae; J1–J3 being absent. Setae J5 are short and simple. The distribution and relative lengths of the setae on the dorsal shield are shown in the Text-fig.

Tritosternum large with a pair of strongly pilose laciniae, and flanked at its base by two pairs of pre-endopodal shields. Sternal shield with three pairs of simple setae and faintly reticulated (Text-fig. 23). Genital shield slightly convex posteriorly and with a pair of setae. Ventri-anal shield wider than long (177 μ long $\times$ 318 μ wide) with a transverse line anteriorly, and bearing thirteen setae. Four small sclerotized plates are situated between the genital and ventri-anal shields. Stigma situated between coxae III and IV. Peritreme broad, occupying most of the peritrematal shield, and with two deep indentations (Text-fig. 24), and extending posterior to the stigma. Metapodal shields fused with the peritrematal shields.

Venter of gnathosoma with rostral and internal palptrochanter setae long and

whip-like. All setae on pedipalp simple. Tectum three-pronged and typical of the genus. The chelicerae are typical.

Leg I (700–760 μ long) with the tarsus (202 μ) longer than the tibia (126 μ). Setae on tarsus fine, those on remaining segments stouter. Tarsi II–IV with a pair of long lanceolate setae. Ambulacrum of tarsus I fairly short and claws small. Pulvilli of ambulacra II–IV produced into three acuminate lobes (Text-fig. 25).



Figs. 22–25. *Platyseius mollicomus* Berlese, female. Fig. 22, dorsum. Fig. 23, venter. Fig. 24, peritrematal shield. Fig. 25, tarsus II.

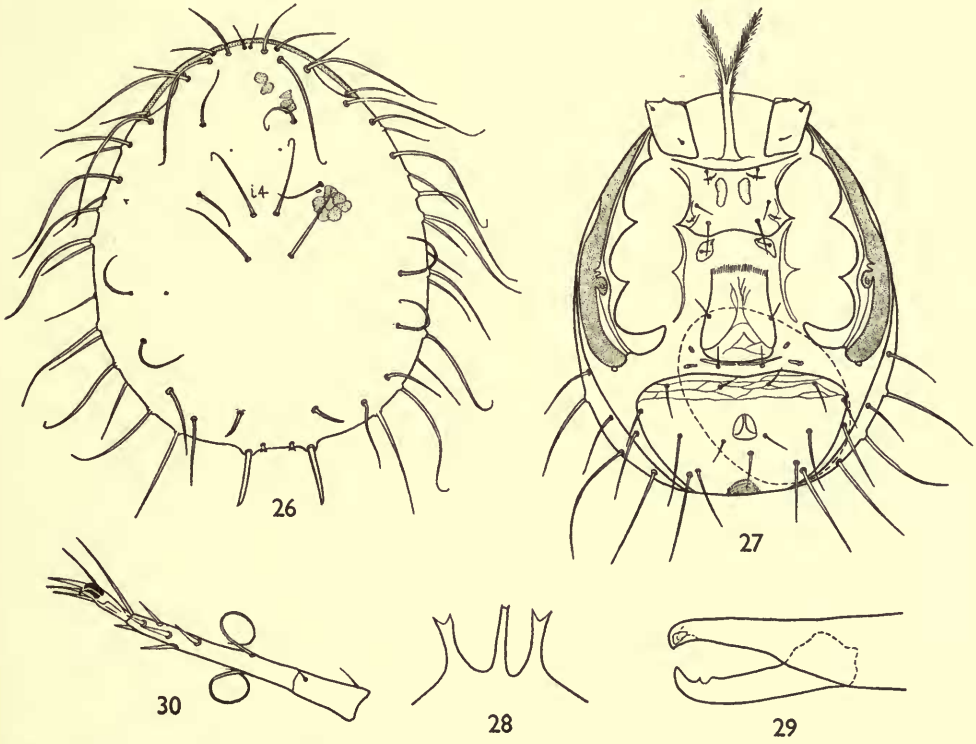
Male. This sex (415 μ × 340 μ) is described by Vitzthum (1931) who also gives a figure of the chelicera.

Distribution. Berlese (1916) based his description on material collected in Java by Cl. Jacobson. Vitzthum (1931) examined specimens (male, female and deutonymph) from Tjibodas, Java (Indonesia). The Museum Collections contain a female and a deutonymph collected by A. H. G. Alston in decaying leaves and

fruit, Bogor, Indonesia (1956.2.27.6); and a single female collected by G. Owen Evans in grassland nine miles north-east of Bundibugyo, Ruwenzori, Uganda, 24.viii.1952 (1959.1.20.1).

Platyseius jamaicensis sp. nov.

FEMALE. Dorsal shield (498 μ × 392–402 μ) broadly oval in outline; ornamentation restricted to a number of small punctate areas. "Anterior dorsal shield" with twenty pairs of simple setae of which the verticals are the shortest (Text-fig.



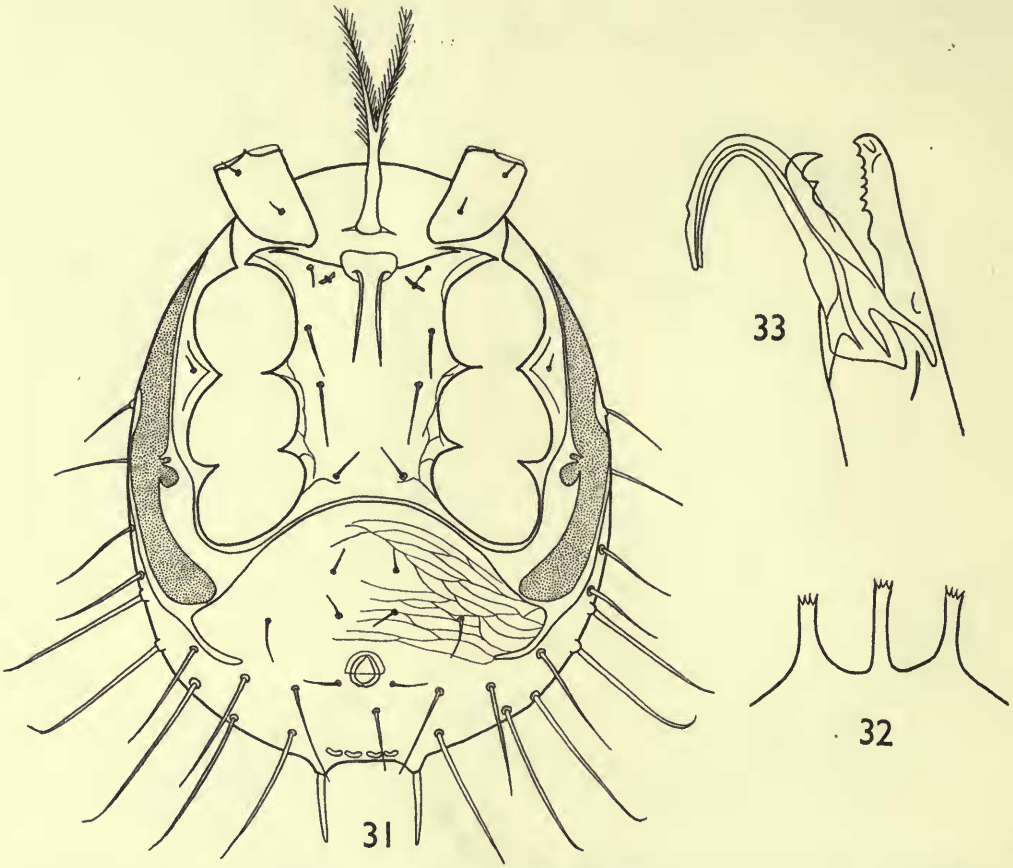
FIGS. 26–30 *Platyseius jamaicensis* sp. nov., female. Fig. 26, dorsum. Fig. 27, venter. Fig. 28, tectum. Fig. 29, chelicera. Fig. 30, tarsus II.

26). "Posterior dorsal shield" with thirteen pairs of setae; J1–J3 being absent. Setae J5 short, palmate and inconspicuous. J4 and Z5 are stout. The distribution and relative lengths of the setae on the dorsal shield are shown in the Text-fig.

Tritosternum large with a pair of strongly-pilose laciniae. Sternal shield with a pair of longitudinal elongate punctate areas and three pairs of simple setae (Text-fig. 27). Genital shield convex posteriorly and finely reticulated, with a pair of setae. Ventri-anal shield wider than long (152 μ long × 253–273 μ wide), reticulated

anteriorly and bearing fifteen setae. Four small sclerotized plates are situated between the genital and ventri-anal shields. Stigma situated between coxae III and IV, peritreme extending posterior to the stigma ; peritrematal shield strongly developed. Metapodal shields apparently fused with the peritrematal shields.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum (Text-fig. 28) three-pronged



FIGS. 31–33. *Platyseius jamaicensis* sp. nov., male. Fig. 31, venter. Fig. 32, tectum. Fig. 33, chelicera.

and typical of the genus. Dentition of chelicera as in Text-fig. 29.

Leg I (about 770 μ long) with the tarsus (177 μ) longer than the tibia (157 μ). Setae on tibia and tarsus very fine : those on remaining segments stouter. Tarsi II–IV with a pair of long lanceolate setae. Ambulacrum of tarsus I short and the claws small. Pulvilli of ambulacra II–IV produced into three acuminate lobes (Text-fig. 30).

MALE. Dorsal shield (498 μ × 310 μ) similar to that of the female. The tritosternum is of the same form as in the female. The chaetotaxy and sclerotization of the venter are shown in Text-fig. 31.

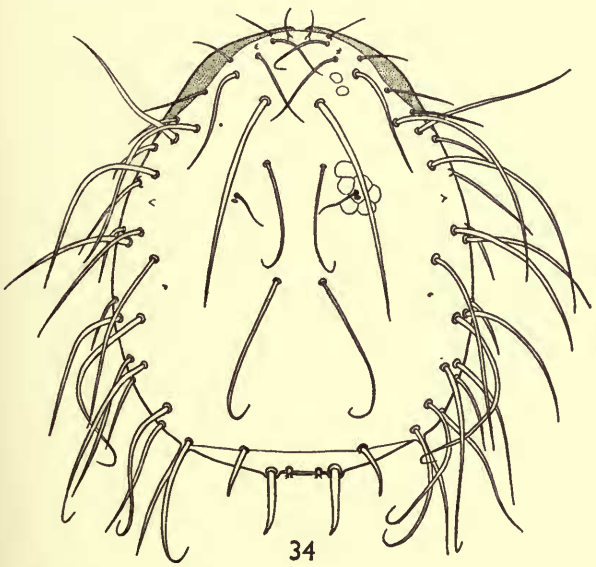
The gnathosoma is similar to that of the female, and the tectum is shown in Text-fig. 32. The spermatophoral process is about twice as long as the movable digit of the chelicera (Text-fig. 33).

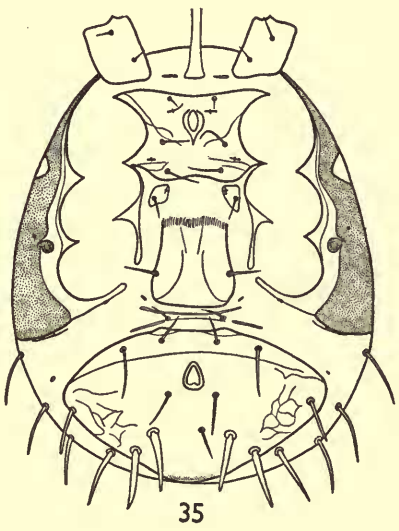
Leg I (c. 680 μ) with the tarsus and tibia each 152 μ. The chaetotaxy and ambulacra of the legs are as in the female.

LOCALITY. Jamaica, B.W.I. The holotype female (1959.1.20.18) and one paratype from Fairy Glade, St. Andrew, in *Lycopodium*, 4,300 ft., 6.xii.1956; and the allotype male (1959.1.20.19) from St. Thomas, John Cove Mountains, in moss, 2,300 ft., 25.v.1956 collected by P. F. Bellinger. The paratype female has been returned to the collector.

Platyseius spinosus sp. nov.

FEMALE. Dorsal shield (498 μ × 402 μ) broadly oval in outline; ornamentation restricted to a number of very faint reticulated areas. " Anterior dorsal shield "





FIGS. 34–35. *Platyseius spinosus* sp. nov., female. Fig. 34, dorsal shield. Fig. 35, venter.

with twenty-one pairs of simple setae (Text-fig. 34). Posterior dorsal shield with thirteen pairs of simple setae; J1–J3 being absent. Setae J5 are short, palmate and inconspicuous. Z5 are stout. The distribution and relative lengths of the setae on the dorsal shield are shown in the Text-fig.

Tritosternum large with a pair of strongly-pilose laciniae, and flanked at its base by one or two pairs of pre-endopodal shields. Sternal shield with three pairs of simple setae and with a characteristically-shaped central mark (Text-fig. 35). Genital shield slightly convex posteriorly and with a pair of setae. Ventri-anal shield wider than long (177 μ long $\times$ 298 μ wide) with a transverse line anteriorly and bearing thirteen setae of which two pairs are stout. A narrow sclerotized band and two narrow plates are situated between the genital and ventri-anal shields. Stigma situated between coxae III and IV, peritreme broad, occupying most of the peritrematal shield, with a deep indentation, and extending posterior to the stigma. Metapodal shields fused with the peritrematal shields.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged and typical of the genus. The chelicerae are typical.

Leg I (707 μ long) with the tarsus (202 μ) longer than the tibia (126 μ). Setae on tarsus fine ; those on remaining segments stouter. Tarsi II–IV with a pair of long lanceolate setae. Ambulacrum of tarsus I short and claws small. Pulvilli of ambulacra II–IV produced into three acuminate lobes.

MALE. Unknown.

LOCALITY. Ruwenzori, Uganda. A single female (1959.1.20.20), collected by G. Owen Evans, in grassland at 2,850 ft., 24.viii.1952, nine miles north-east of Bundibugyo.

Genus ***PLESIOSEJUS*** gen. nov.

Platyseiine mites with the " posterior dorsal shield " having only three pairs of setae in the J series (J1 and J2 absent). Z and J series each with five pairs. Lateral margins of the dorsal shield entire in the adult stages. Vertical setae present or absent. Sternal shield in the female with three pairs of simple setae ; metasternals free. Genital shield wedge-shaped and bearing a pair of setae. Ventri-anal shield large with three or four pairs of setae in addition to the paranals and the postanal seta. Male with sterniti-genital and ventri-anal shields, the latter showing varying degrees of fusion with the podal-peritrematal and dorsal shields.

Type species ***Ameroseius italicus*** Berlese, 1905

KEY TO SPECIES—FEMALES

1. Without poststigmatic prolongation of peritreme (Text-fig. 50) ; majority of dorsal setae long, stout (Text-fig. 49) ; vertical setae well developed, directed anteriorly ; ventri-anal shield with 9 setae. Jamaica . . *P. horridus* sp. nov. (p. 48)
   —With strong poststigmatic prolongation of peritreme extending posterior to coxa IV ; dorsal setae considerably shorter (Text-fig. 36) ; vertical setae absent ; ventri-anal shield with 11 setae 2
2. Dorsal shield with distinct " tubercle " posterior to J4 (Text-fig. 36). Europe *P. italicus* (Berlese), (p. 43)
   —Dorsal shield without such " tubercle " (Text-fig. 42). *P. major* (Halbert), (p. 47)

Plesiosejus italicus (Berlese), comb. nov.

Ameroseius italicus Berlese, A., (1905). *Redia*, **2** : 234 ; (1906). *Ibid.*, **6** : tav. 19, Text-figs. 35, 35a.
Paraseius tenuipes Halbert, J. N. (1915). *Proc. R. Irish Acad.*, **39**ii : 78, syn. nov.
Lasioseius italicus Berlese, A., (1916). *Redia*, **12** : 34.
? Lasioseius (*Episeius*) *michaeli* Halbert, J. N., (1923). *J. Linn. Soc. Lond.* (*Zool.*), **35** : 373.
Episeius tenuipes, Schweizer, J., (1949). *Rés. Rech. sci. Parc Nat. Suisse, N.F.* **2** : 60.
E. tenuipes, Franz, H., (1943). *Denkschr. Akad. Wiss. Wien.*, **107** : 87.

Female. Dorsal shield (550–651 μ long × 310–402 μ wide) oval; ornamentation comprising a reticulated pattern covering the whole shield (Text-fig. 36). " Anterior dorsal shield " with twenty pairs of simple setae ; verticals absent. " Posterior dorsal shield " with thirteen pairs of setae ; J1–J2 being absent ; J5 are finely pilose. A strong tubercle arising posterior to setae J3 denotes the highest point on the median ridge of the dorsal shield. The distribution and relative lengths of the setae and the structure of the dorsal shield are shown in the Text-fig.

Tritosternum well developed with pilose laciniae, and flanked at its base by one or two pairs of small pre-endopodal shields. Sternal shield with three pairs of simple setae and two oval areas antero-medially (Text-fig. 37). Genital shield convex posteriorly, and bearing one pair of setae. Ventri-anal shield considerably wider than long (177–202 μ long × 265–341 μ wide), reticulated and bearing eleven simple setae. Between the genital and ventri-anal shields lie six narrow sclerotized plates. Stigma between coxae III and IV and the peritreme extending posterior to coxa IV ; peritrematal shield strongly sclerotized. Metapodal shields free and transversely situated.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged and typical of the genus. The dentition of the chelicera is shown in Text-fig. 38.

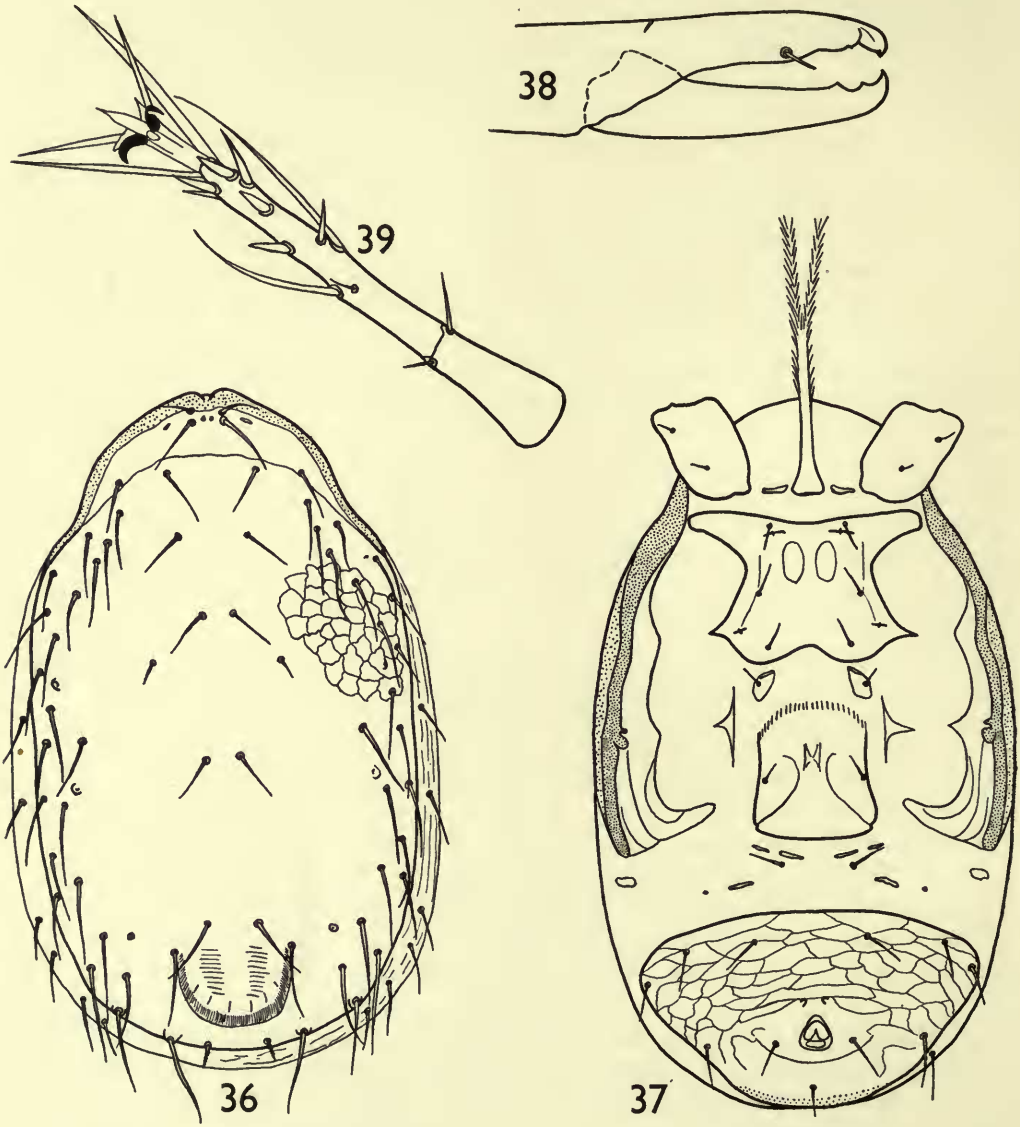
Leg I (639–726 μ long) with the tarsus (167–195 μ) longer than the tibia (113–129 μ). Setae on tarsus and tibia very fine ; those on remaining segments stouter ; ambulacra short and claws small. Tarsi II–IV with a pair of lanceolate setae ; pulvilli produced into three acuminate lobes (Text-fig. 39).

Male. Dorsal shield (467–507 μ long × 279–310 μ wide) entirely reticulated as in the female. " Anterior dorsal shield " with nineteen pairs of simple setae, verticals absent. " Posterior dorsal shield " with thirteen pairs of setae ; J1–J3 absent ; J5 short and pilose. Postero-dorsal tubercle not so pronounced as in the female.

Tritosternum as in the female. The chaetotaxy and sclerotization of the venter are shown in Text-fig. 40. The gnathosoma and tectum are similar to those of the female. Spermatophoral process four times as long as the movable digit of the chelicera (Text-fig. 41).

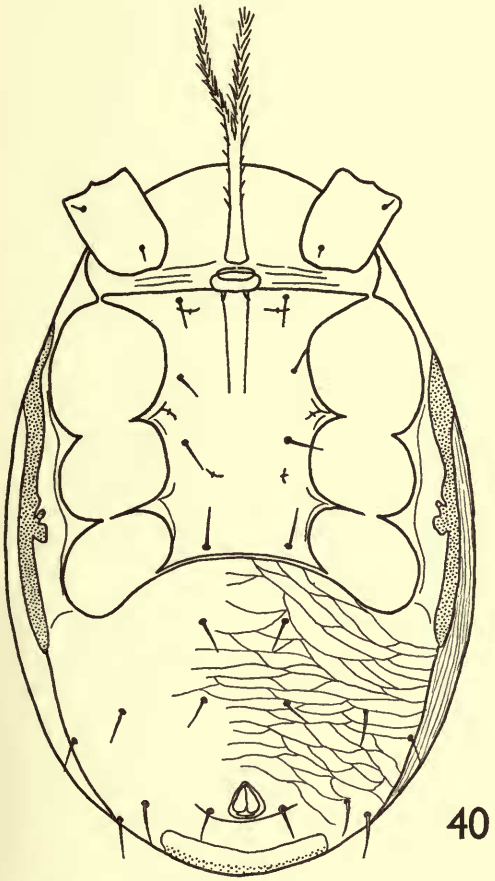
Leg I (534 μ long) with the tarsus (147–152 μ) longer than the tibia (96–106 μ). The chaetotaxy and ambulacra of the legs are similar to the female.

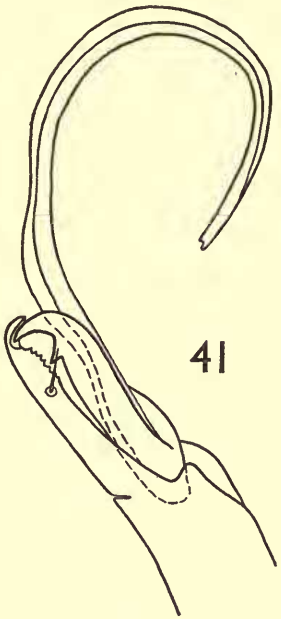
DISTRIBUTION. Berlese's (1905 and 1916) descriptions of the male and female of *italicus* are based on specimens collected under dead rotting leaves on a marsh at Udine in northern Italy. Halbert (1915) described *P. tenuipes* from a single female " found amongst moss on a stone in a mountain stream at Glencree, County Dublin, May ". Schweizer (1949) records *tenuipes* from the Swiss National Park. We have



FIGS. 36–39. *Plesiosejus italicus* (Berlese), female. Fig. 36, dorsum. Fig. 37, venter. Fig. 38. chelicera. Fig. 39, tarsus II

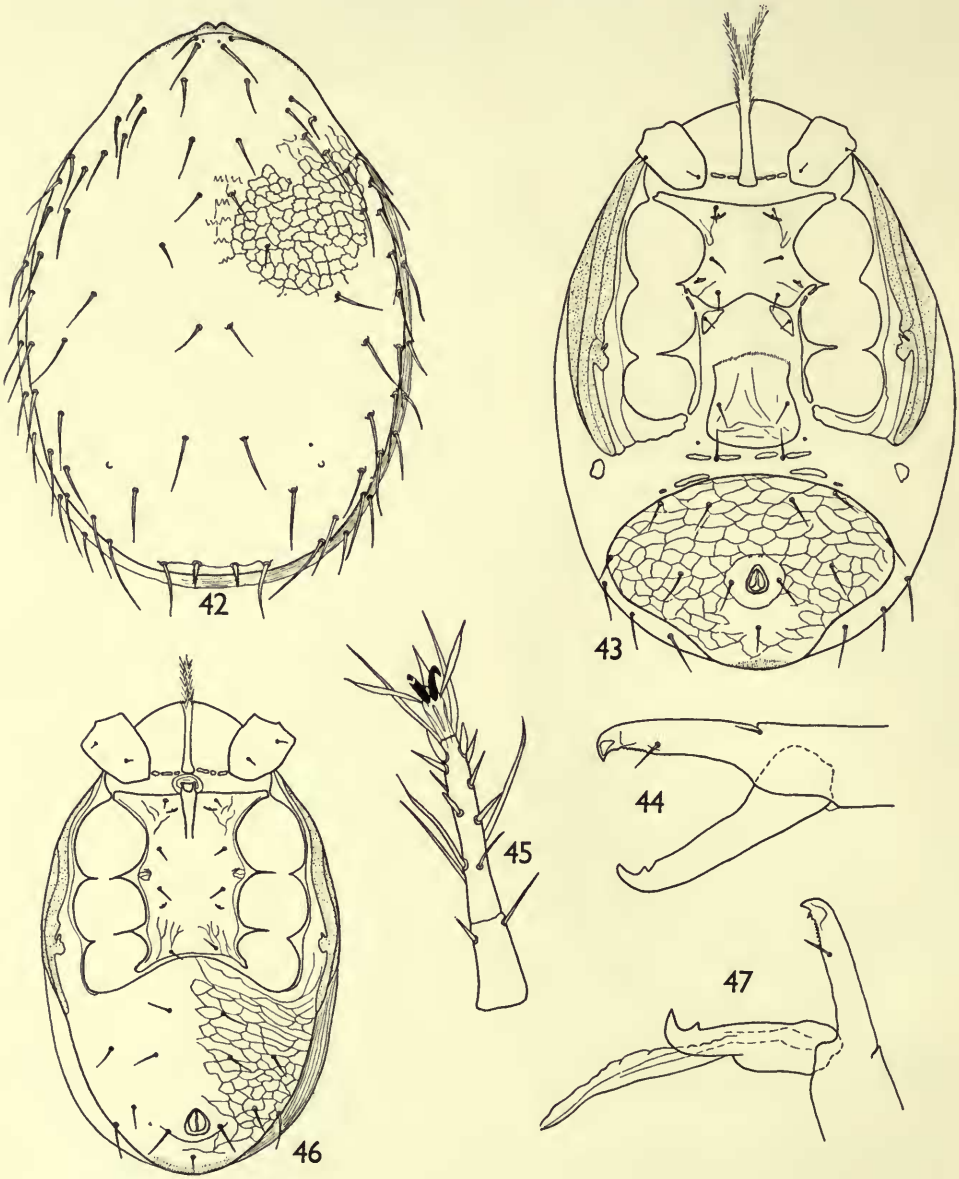
examined British specimens from the following localities: Thirlmere, Cumberland, 25.ix.1956, coll. P. N. Lawrence; Grasmere, Westmorland, 29.vi.1951, coll. J. T. Salmon; Blelham Tarn, Lancashire, 22.iii.1955, coll. R. J. Elliott; summit of Snowdon, Caernarvonshire, August, 1951, coll. E. Duffey; Minworth, Birmingham, 10.ix.1952, coll. T. G. Tomlinson; Swithland Wood and Anstey, Leicestershire, 19.iv.1958, coll. P. N. L.; Sea Houses, Northumberland, 1.x.1951, coll. J. T.





FIGS. 40–41. *Plesiosejus italicus* (Berlese), male. Fig. 40, venter. Fig. 41, chelicera.

Salmon; Oxted, Surrey, 20.i.1957, coll. P. N. L.; Leith Hill, Surrey, 6.vi.1951, coll. J. T. Salmon; Keston, Kent, 2.viii.1957, coll. P. N. L.; Dungeness, Kent, 8.vii.1955, coll. D. A. Chant; Avonmouth, Gloucestershire, 11.v.1957, coll. P. N. L.; Combe Martin, Devonshire, March and June, 1957, coll. P. N. L. and M. E. Bacchus; Porth Gwarra, Cornwall (A. D. Michael Coll.); The Burren, Co. Clare, 6.vi.1951, coll. E. A. J. Duffy.



FIGS. 42–47. *Plesiosejus major* (Halbert). Fig. 42, dorsum of female. Fig. 43, venter of female. Fig. 44, chelicera of female. Fig. 45, tarsus II of female. Fig. 46, venter of male. Fig. 47, chelicera of male.

Plesiosejus major (Halbert), comb. nov.

Lasioseius (*Episeius*) *major* Halbert, J. N., (1923). *J. Linn. Soc. Zool. Lond.* **35** : 373.
Lasioseius (*L.*) *tenuipes*, Schweizer, J., (1922). *Verh. Naturf. Ges. Basel*, **33** : 43.
Episeius major, Schweizer, J., (1949). *Rés. Rech. sci. Parc Nat. Suisse, N.F.* **2** : 61.

Female. Dorsal shield (581–740 μ long × 371–488 μ wide) broadly oval in outline : ornamentation consisting of a dense reticulated pattern covering the whole of the shield (Text-fig. 42). " Anterior dorsal shield " with twenty pairs of simple setae. " Posterior dorsal shield " with thirteen pairs of setae ; J1–J2 being absent ; setae J5 are short and spiculate. The distribution and relative lengths of the dorsal setae are shown in the Text-fig.

Tritosternum well developed with pilose laciniae, and flanked at its base by two or three pairs of small pre-endopodal shields. Sternal shield with three pairs of simple setae (Text-fig. 43). Genital shield with one pair of setae and slightly convex posteriorly. Ventri-anal shield wider than long (203–253 μ long × 288–379 μ wide), strongly reticulated and bearing eleven simple setae. Six narrow sclerotized plates are situated transversely on the membrane between the genital and ventri-anal shields. Stigma situated between coxae III and IV with the peritreme extending posterior to coxa IV. Peritrematal shield strongly sclerotized. Metapodal shields free and obliquely situated.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged and typical of the genus. The dentition of the chelicera is shown in Text-fig. 44.

Leg I (681–797 μ long) with the tarsus (147–177 μ) longer than the tibia (106–152 μ) ; pulvillus short, claws small. Setae on tarsus and tibia very fine ; those on remaining segments stouter. Tarsi II–IV with a pair of lanceolate setae ; pulvilli produced into three acuminate lobes (Text-fig. 45).

Male. Dorsal shield (550 μ long × 340 μ wide) of the same form and chaetotaxy as the female. The structure and chaetotaxy of the venter are shown in Text-fig. 46. The gnathosoma and tectum are similar to those of the female. The spermatophoral process is twice as long as the movable digit of the chelicera (Text-fig. 47).

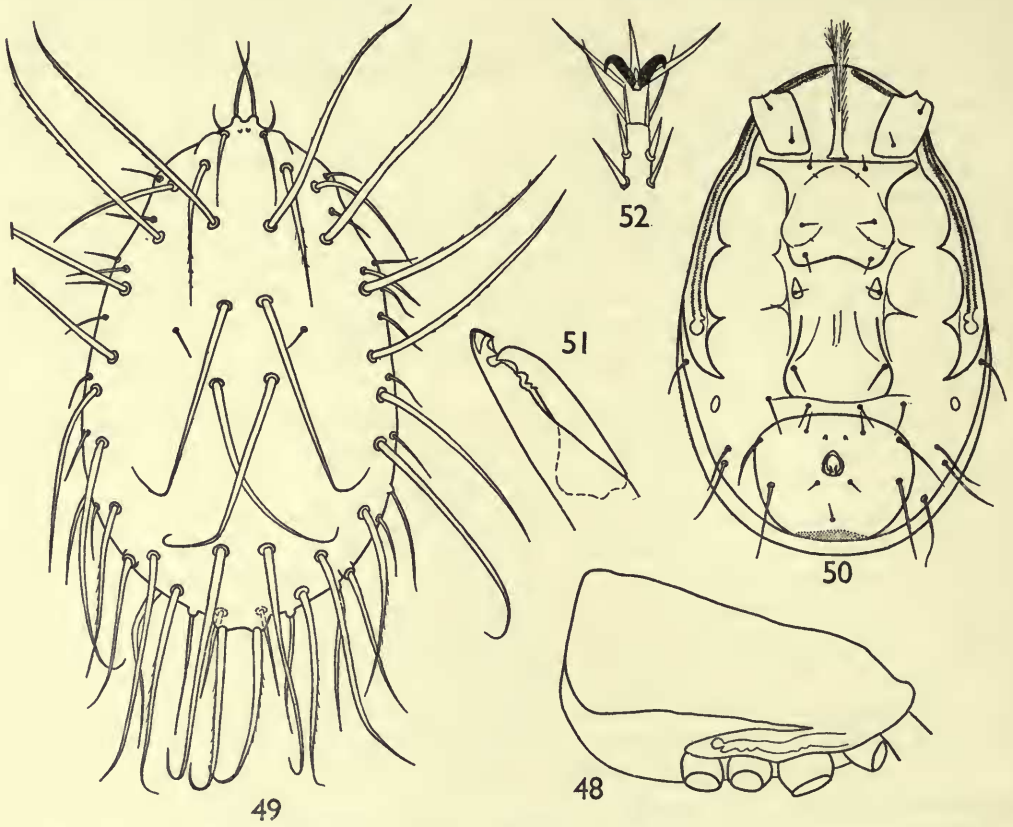
Leg I (670 μ long) with the tarsus (165 μ) longer than the tibia (126 μ). The legs are similar to those of the female.

Distribution. Halbert's (1923) description of males and females of this species is based on specimens found in moss in streams at Kilmashogue and Glencullen in Ireland, and at Mill Bay, Land's End, England. Schweizer (1922) described what he considered to be males of *Lasioseius tenuipes* (Halbert) from Basel, Switzerland, but his figures show clearly that his specimens are *Plesiosejus major* (Halbert). In 1949 the same author recorded *major* from the Swiss National Park. We have examined specimens collected by the River Tolka, Glasnevin, Co. Dublin (Halbert Collection), and from the following localities : Oxted, Surrey, 20.i.1957, coll. P. N. Lawrence ; Cumber Park, Nottinghamshire, April, 1955, coll. G. O. E. ; Markfield and Anstey, Leicestershire, 19.iv.1958, coll. P. N. L.; Blea Tarn, West-

morland, 27.ix.1956, coll. P. N. L.; and Chorley, Lancashire, 21.xi.1940, coll. Water Pollution Research Laboratory. All these British specimens were collected from wet habitats (mosses, etc.).

Plesiosejus horridus sp. nov.

Female. Dorsal shield (350 μ long $\times$ 218 μ wide) narrower in outline than in the other species of the genus, and is steeply elevated posteriorly (Text-fig. 48).



Figs. 48–52. *Plesiosejus horridus* sp. nov., female. Fig. 48, lateral view of dorsum. Fig. 49, dorsal shield. Fig. 50, venter. Fig. 51, chelicera. Fig. 52, tarsus II.

There is no noticeable ornamentation on the dorsal shield. "Anterior dorsal shield" with twenty pairs of setae. J1–J3 absent. Setae J5 are partly concealed by the postero-dorsal elevation of the dorsal shield which bears J4 at its apex (Text-fig. 49). The distribution and relative lengths of the dorsal setae are shown in the Text-fig.

Tritosternum well developed with pilose laciniae. Sternal shield with three pairs

of short simple setae (Text-fig. 50). Genital shield flask shaped with a pair of setae. Ventri-anal shield slightly wider than long (93 μ long × 113 μ wide), with nine setae of which two lateral pairs are long. There appears to be a narrow sclerotized band between the genital and ventri-anal shields. Stigma between coxae III and IV, with the narrow, crenate peritreme not extending posterior to the stigma. Peritrematal shield extending to the posterior margin of coxa IV. Metapodal plates oval, free.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged and typical of the genus. The dentition of the chelicera is shown in Text-fig. 51.

Leg I (370 μ long) with the tarsus (96 μ) one-and-a-half times as long as the tibia (63μ). Setae on tarsus very fine ; those on remaining segments stouter. Tarsi II–IV with a pair of lanceolate setae. Tarsus I without claws. Pulvilli of tarsi II–IV produced into three acuminate lobes (Text-fig. 52). Leg IV 370 μ long with the tarsus 130 μ.

Male. Unknown.

Locality. Jamaica, B.W.I. The holotype female (1959.1.20.41) and two paratype females (1959.1.20.42) in damp leaf litter, St. Ann, Mt. Diablo, 2,200 ft., 3.vi.1956, collected by P. F. Bellinger. One paratype has been returned to the collector.

Genus ***SEJUS*** C. L. Koch

Sejus Koch, C. L., (1843)[1] *Übers. d. Arachnidensyst., Heft* **3** : 92.
Cheiroseius Berlese, A., (1916). *Redia,* **12** : 33.
Episeius Hull, J. E., (1918). *Trans. nat. Hist. Soc. Northumb.* (*n.s.*), **5** : 63.
Episeiella Willmann, C., (1938). *Ann. Hist. nat. Mus. Hung.*, **31** : 167.

Platyseiine mites with the " posterior dorsal shield " bearing fifteen pairs of setae of which five pairs belong to the J series ; S series also comprising five pairs. Dorsal setae usually simple, rarely pilose. Lateral margins of the dorsal shield entire or incised. Sternal shield in the female with three pairs of setae ; metasternals free. Genital shield wedge shaped and bearing a pair of setae. Ventri-anal shield large with two or more pairs of pre-anals. Peritreme with or without poststigmatic process. Leg I rarely without ambulacrum, usually with at least two claws. Legs II–IV with normal ambulacrum.

This is, at present, the largest genus of the subfamily. A number of the older species are inadequately described and must remain *species incertae sedis* until the type material can be re-examined. The following key includes only those species we have examined.

Type species ***Sejus viduus*** C. L. Koch, 1839

[1] pp. 73–132 of the third Heft were published in 1843 although most authors consider the complete Heft to have appeared in 1842.

KEY TO THE SPECIES IN THE BRITISH MUSEUM (NATURAL HISTORY)—FEMALES

1. Dorsal shield with lateral incisions (Text-figs. 114 and 168) 2
—Lateral margins of the dorsal shield entire 3

2. Lateral incisions located anterior to setae S1 and coinciding with their position in the deutonymph (Text-fig. 114); median process of tectum long, Y-shaped (Text-fig. 117); vertical setae absent; ventri-anal shield with one pair of preanals (Text-fig. 116). Sikkim . . . . *S. clayi* sp. nov. (p. 73)
—Lateral incisions wide and situated between S2 and S3 (Text.-fig 168); median process of tectum not Y-shaped; vertical setae present; ventrianal shield with two pairs of preanals (Text-fig. 169). Argentina . *S. ornatus* sp. nov. (p. 88)

3. Tarsus I without ambulacrum (Text-fig. 12) 4
—Tarsus I with ambulacrum or at least with two distinct claws . . . 6

4. Vertical setae considerably longer than i2 (Text-fig. 53); poststigmatic process of the peritreme extending posterior to coxa IV (Text-fig. 54). Europe *S. viduus* C. L. Koch. (p. 52)
—Vertical setae shorter than i2 (Text-fig. 162); poststigmatic process very short or absent 5

5. With a short but conspicuous poststimatic process of the peritreme; sternal shield with an elongate reticulated area (Text-fig. 164). Sikkim and Argentina *S. browningi* sp. nov. (p. 86)
—Without a poststigmatic process; sternal shield without such ornamentation (Text-fig. 144). Jamaica . . . . . *S. hulli* sp. nov. (p. 81)

6. Peritreme not produced posterior to the stigma (Text-fig. 81) *or* poststigmatic process narrow, short, never extending posterior to coxa IV (Text-fig. 154) . 7
—Poststigmatic portion of the peritreme strongly developed and extending posterior to coxa IV (Text-fig. 56) 17

7. Dorsal shield strongly arched (Text-fig. 79); sternal region not definitely sclerotized (Text-fig. 81); a number of dorsal setae broad, pilose; ventrianal shield with 7 setae. Britain . . . . . *S. dromadis* sp. nov. (p. 62)
—Dorsal shield at the most with a median longitudinal ridge; sternal shield well-sclerotized; dorsal setae simple or lanceolate 8

8. Leg IV greatly elongated, more than twice the length of the dorsal shield (Text-fig. 99); vertical setae prominent, directed anteriorly; ventri-anal shield with 9 setae. E. Africa . . . . . *S. phalangioides* sp. nov. (p. 66)
—Leg IV never more than $1\frac{1}{3}$ times the length of the dorsal shield . . . 9

9. Vertical setae apparently absent (Text-fig. 124); dorsal and ventral shields characteristically ornamented (Text-figs. 124, 125, 129). Jamaica *S. aciculatus* sp. nov. (p. 76)
—Vertical setae present, prominent, directed anteriorly (Text-fig. 153) . . 10

10. Peritreme with a distinct poststigmatic process (Text-fig. 154) 11
—Peritreme without a poststigmatic process (Text-fig. 141) 13

11. Dorsal shield with a distinct " tubercle " in the region of setae J4—this indicates the highest point of the median longitudinal ridge (Text-fig. 153); postigmatic portion of peritreme extending to about the middle of coxa IV. Jamaica *S. neborealis* sp. nov. (p. 84)
—Dorsal shield without tubercle in the region of setae J4 12

12. Vertical setae shorter than j2 (Text-fig. 103); femur, genu and tibia of leg with sharply pointed spine-like setae situated on tubercles along their anterior and posterior margins; ventri-anal shield with 9 setae (Text-fig. 104). E. Africa *S. spinipes* sp. nov. (p. 69)
—Vertical setae long, about equal in length to j2 (Text-fig. 63); chaetotaxy of leg I normal; ventri-anal shield with 11 setae. Europe *S. borealis* (Berl.) (p. 56)

13. Tarsus I with a long, strong seta situated dorsally towards the middle of the segment (Text-fig. 140) 14
—Tarsus I without such a prominent seta dorsally 15

14. Dorsal shield with a conspicuous tubercle overhanging setae J5 (Text-fig. 158). Jamaica . . . . . *S. nodosus* sp. nov. (p. 85)
—Dorsal shield without a tubercle in the region of setae J4 and J5 (Text-fig. 138). Jamaica . . . . . *S. bellingeri* sp. nov. (p 81).

15. Ventri-anal shield broad, gently rounded posteriorly (Text-fig. 92); peritrematal shield not developed posterior to coxa IV. E. Africa . *S. kennedyi* sp. nov. (p. 65)
—Ventri-anal shield markedly tapering in its posterior half (Text-figs. 121 and 132), subtriangular in outline 16

16. Sternal shield with a distinct reticulated area medially; pre-endopodal shields absent; paranal setae situated on a strongly-sclerotized bar (Text-fig. 132). Jamaica . . . . . *S. antillanus* sp. nov. (p. 78)
—Sternal shield without reticulated area; pre-endopodal shields present (Text-fig. 121); paranals not on sclerotized bar. Indonesia . *S. alstoni* sp. nov. (p. 74)

17. Claws on leg I large, sessile (Text-fig. 14); tarsus I with a thick spine on its anterior margin. Europe . . . . . *S. unguiculatus* (Berl.) (p. 53)
—Claw on leg I normal, usually situated on a pretarsus, if sessile claws minute (Text-fig. 13) 18

18. Surface of dorsal shield minutely punctured or tuberculated (Text-fig. 55), reticulation when present restricted to the lateral margins of the shield 19
—Surface of the dorsal shield reticulated, often scabrid, without punctures (Text-fig. 74) 20

19. Dorsal shield minutely punctured (Text-fig. 55); sternal shield with an oval reticulated area (Text-fig. 56); ventri-anal shield with 11 setae. Europe *S. laelaptoides* (Berl.) (p. 54)
—Dorsal shield tuberculated (Text-fig. 174); sternal shield lacking a reticulated area; ventri-anal shield with 9 setae (Text-fig. 175). Argentina *S. tuberculatus* sp. nov. (p. 89)

20. Claws on leg I minute, apparently sessile; leg I long and slender, about $1\frac{1}{2}$ times the length of the dorsal shield 21
Claws on leg I situated on a short but distinct pretarsus; leg I usually considerably less than $1\frac{1}{2}$ times the length of the dorsal shield 22

21. Tibia and tarsus I approximately equal in length; tarsus I more than 200μ in length. Jamaica . . . . . *S. jamaicensis* sp. nov. (p. 83)
—Tibia I distinctly longer than tarsus I; tarsus I not more than 160μ in length. Nepal . . . . . *S. nepalensis* sp. nov. (p. 71)

22. Vertical setae long, directed anteriorly (Text-fig. 74); dorsal shield heavily ornamented; tarsus I about twice the length of tibia I. British Isles *S. cassiteridum* sp. nov. (p. 61)
—Vertical setae relatively shorter, directed antero-laterally or posteriorly (Text-figs. 67 and 86); vertex not well developed 23

23. Tibia I equal in length to or longer than tarsus I. Europe *S. serratus* (Halbert) (p. 58)
Tibia I distinctly shorter than tarsus I (1 : 1.3–1.7) 24

24. Ventri-anal shield with five subcircular areas arranged crescentically posterior to the paranals (Text-fig. 87); small weakly-sclerotized species about 360μ in length. E. Africa . . . . . *S. areolatus* sp. nov. (p. 64)
Ventri-anal shield without such areas; larger species 400–800μ in length . . 25

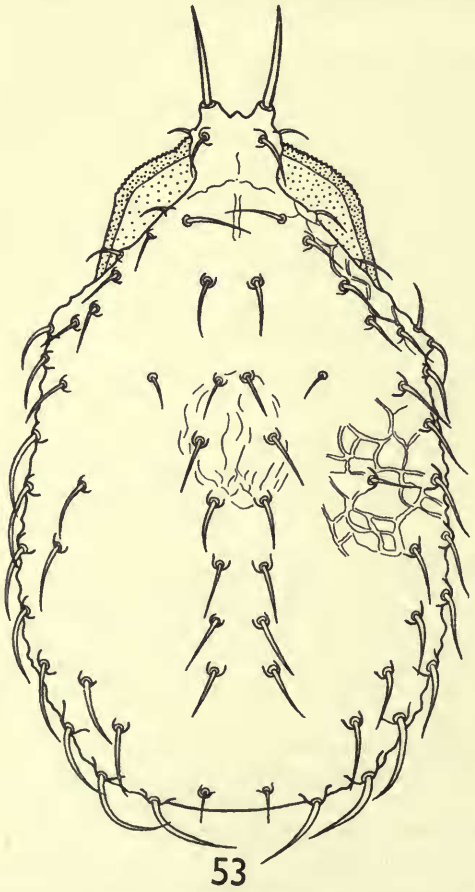
25. J5 about $\frac{3}{4}$ the length of J4, setiform (Text-fig. 110). Nepal *S. parbatensis* sp. nov. (p. 72)
J5 less than $\frac{1}{2}$ the length of J4, usually thorn-like 26

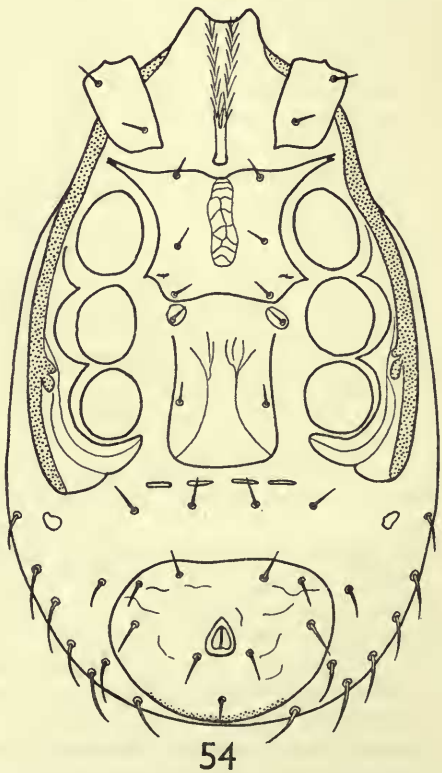
26. Sternal shield without semicircular depressions near its anterior margin (Text-fig. 71). Europe . . . . . *S. curtipes* (Halbert) (p. 59)
—Sternal shield with a pair of semicircular depressions near its anterior margin (Text-fig. 60) 27
27. Sclerotized bases of the vertical setae large, almost contiguous (Text-fig. 59); highest point of median dorsal ridge located between i5. Europe *S. necorniger* (Oudemans) (p. 55)
—Bases of vertical setae weakly sclerotized, widely separated (Text-fig. 100); highest point of median dorsal elevation located between i5 and J1. E. Africa *S. signatus* sp. nov. (p. 68)

Sejus viduus C. L. Koch

Sejus viduus Koch, C. L., 1839, *Deutsch. Crust. Myr. Arach., Fasc.* 24, t. 10.
Epicrius corniger Berlese A., 1891, *A.M.S., Fasc.* 59, No. 2.
Sejus viduus C. L. Koch, Oudemans, A. C., 1936, *K.H.O.A.*, **3**A : 376.
Episeiella heteropoda Willmann, C., 1938, *Ann. Hist. nat. Mus. Hung.*, **31** : 164, syn. nov.

FEMALE. Dorsal shield (529 μ long × 330 μ wide) covered by a strong irregular





FIGS. 53–54. *Sejus viduus* (C. L. Koch), female. Fig. 53, dorsal shield. Fig. 54, venter.

network. Lateral margins irregular. "Anterior dorsal shield" with twenty-one pairs of simple setae; verticals very prominent, well separated, and directed anteriorly. "Posterior dorsal shield" with fifteen pairs of simple setae of which J5 are the shortest. All the setae arise from small protuberances (Text-fig. 53).

Tritosternum with a pair of pilose laciniae. Sternal shield with a reticulated area medially and bearing three pairs of simple setae. Genital shield slightly convex posteriorly and bearing a single pair of simple setae. Ventri-anal shield broader than long (101 μ long $\times$ 139 μ wide) with only faint traces of reticulations, and bearing nine simple setae. Between the genital and ventri-anal shields lie four narrow sclerotized platelets. Stigma situated between coxae III and IV; posterior prolongation of peritreme, and peritrematal shield, reaching beyond the posterior margin of coxa IV (Text-fig. 54). Metapodal shields small.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged, and chelicerae typical of the genus.

Leg I (724 μ long) with the tarsus (144 μ) shorter than the tibia (167 μ). Setae on tarsus, tibia and genu I very fine; tarsal claws absent; remaining setae stouter. Tarsi II–IV with a pair of lanceolate setae; ambulacra without acuminate lobes.

MALE. Unknown.

DISTRIBUTION. Koch's (1839) description is based on material from wet woodland habitats in Germany. Berlese's (1891) description of *Epicrius corniger* is based on several specimens in moss on high mountains, Venice. Berlese's type has been examined by us in Florence. Willmann's (1939) description of *Episeiella heteropoda*, was made from one female sifted at Vihnyei völgy, Hungary, and is the specimen from which our description and figures are made.

Sejus unguiculatus Berlese

Sejus unguiculatus Berlese, A., 1887, *A.M.S.*, 41, No. 4.
Lasioseius (*Cheiroseius*) *unguiculatus* Berlese, A., 1916, *Redia*, **12** : 33.

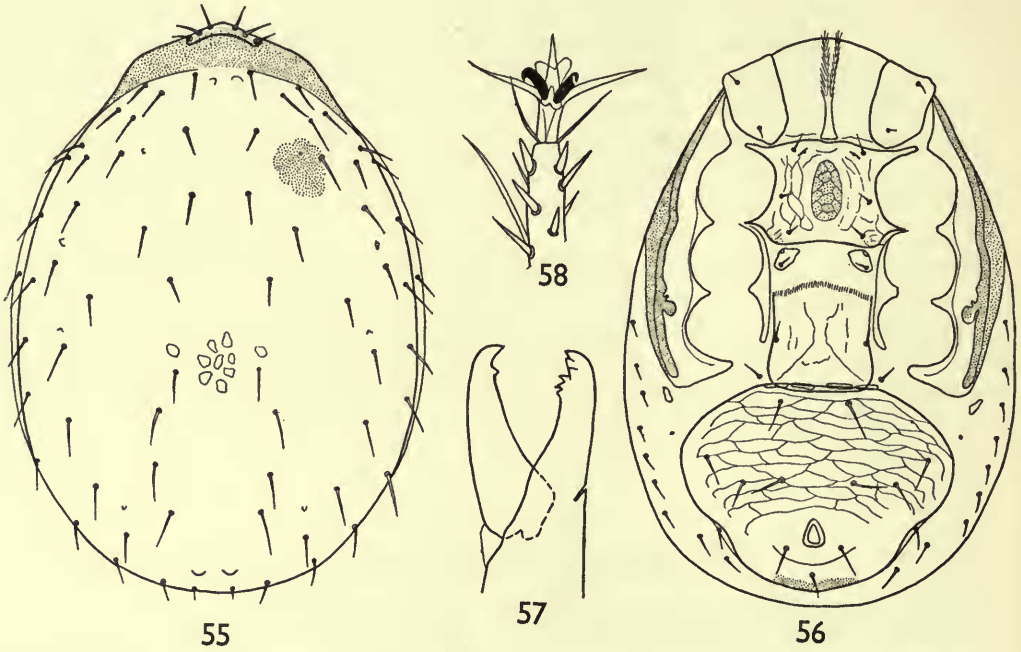
The characteristic feature of this species is that the claws on tarsus I are greatly enlarged and sessile (Text-fig. 14). The chaetotaxy of the dorsal shield is typical of the genus. The "posterior dorsal shield" bears fifteen pairs of setae; five pairs in the J series. The "anterior dorsal shield" bears twenty pairs of setae; vertex weakly developed. The chaetotaxy and sclerotization of the venter are typical of *Sejus*. Sternal shield with three pairs of setae; genital shield with one pair of setae; ventri-anal shield large, occupying most of the area posterior to coxae IV, and bearing eleven simple setae. Six small plates are situated between the genital and ventri-anal shields. Peritreme extending posterior to coxa IV. Metapodal plates conspicuous.

Berlese described this species from moss in Venice. The above description is based on drawings of the type. This species is not represented in the Museum Collections.

Sejus lælaptoides (Berlese) comb. nov.

Epicrius laelaptoides Berlese, A., 1887, *A.M.S., Fasc.* 40, *No.* 10.
Parasejus glaber var. *minor* Trägårdh, I., 1910, *Naturw. Untersuch. Sarekgeb.*, **4** : 432, syn. nov.
Lasioseius (*Episeius*) *sphagni* Halbert, J. N., 1923, *J. Linn. Soc. Lond.* (*Zool.*), **35** : 371, syn. nov.

Female. Dorsal shield (518–581 μ long × 330–415 μ wide) minutely punctured and with a few faint scattered reticulated areas (Text-fig. 55). " Anterior dorsal shield " with twenty-one pairs of simple setae ; verticals well separated and directed anteriorly. " Posterior dorsal shield " with fifteen pairs of simple setae ; J5 very



Figs. 55–58. *Sejus laelaptoides* (Berlese), female. Fig. 55, dorsum. Fig. 56, venter. Fig. 57, chelicera. Fig. 58, tarsus II.

short. The distribution and relative lengths of the dorsal setae, and the ornamentation of the dorsal shield are shown in the Text-fig.

Tritosternum well developed with pilose laciniae. Sternal shield with a conspicuous elliptical reticulated area, and bearing three pairs of simple setae (Text-fig. 56). Genital shield broad, posterior margin straight, and bearing one pair of simple setae. Ventri-anal shield large, broader than long (152–215 μ long × 240–291 μ wide), reticulated, and bearing eleven simple setae. Between the genital and ventri-anal shields lies a row of four narrow sclerotized plates. Stigma situated between coxae III and IV ; peritreme and peritrematal shield extending posterior to coxa IV. Metapodal plates small.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged and typical of the genus. The dentition of the chelicera is shown in Text-fig. 57.

Leg I (536–673 μ long) with the tarsus (113–126 μ) longer than the tibia (104–118 μ). Setae on tarsus and tibia fine, those on other segments somewhat stouter; tarsal claws strong. Tarsi II–IV with a pair of lanceolate setae; ambulacra with three acuminate lobes (Text-fig. 58).

Male. Unknown.

Distribution. Berlese (1887) described *Epicrius laelaptoides* from the Royal Botanic Gardens, Padua. Trägårdh (1910) described *Parasejus glaber* var. *minor* from *Sphagnum* at Sarekgebirge, Sweden, and Halbert (1923) described *Lasioseius* (*Episeius*) *sphagni* from *Sphagnum* in Co. Dublin, Eire. The writers have examined Berlese's type in Florence, Halbert's type, and also numbers of females from Whernside Moor, Cock Hill, and Malham Tarn, Yorkshire; Rydal Water and Grasmere, Westmorland; Leith Hill and Beckley, Surrey; Lapland; and Michigan.

Sejus necorniger (Oudemans) comb. nov.

Hypoaspis necorniger Oudemans, A. C., 1903, *Ent. Ber.*, **1**, 12 : 87.
Platyseius necorniger, Buitendijk, A. M., 1945, *Zool. Med.*, **24** : 296.
Episeius necorniger, Willmann, C., 1949, *Veröff. Mus. Nat. Bremen, No. 1A* : 120.
Episeius necorniger, Willmann, C., 1952, *Veröff. Inst. Meeresf. Bremerhaven*, **1** : 148.

Female. Dorsal shield (550–722 μ long × 320–467 μ wide) completely covered by a fine reticulated pattern (Text-fig. 59). " Anterior dorsal shield " with twenty-one pairs of simple setae; verticals, with their bases close together, considerably shorter than post-verticals. " Posterior dorsal shield " with fifteen pairs of simple setae. The distribution of the setae and the ornamentation of the dorsal shield are shown in the Text-fig.

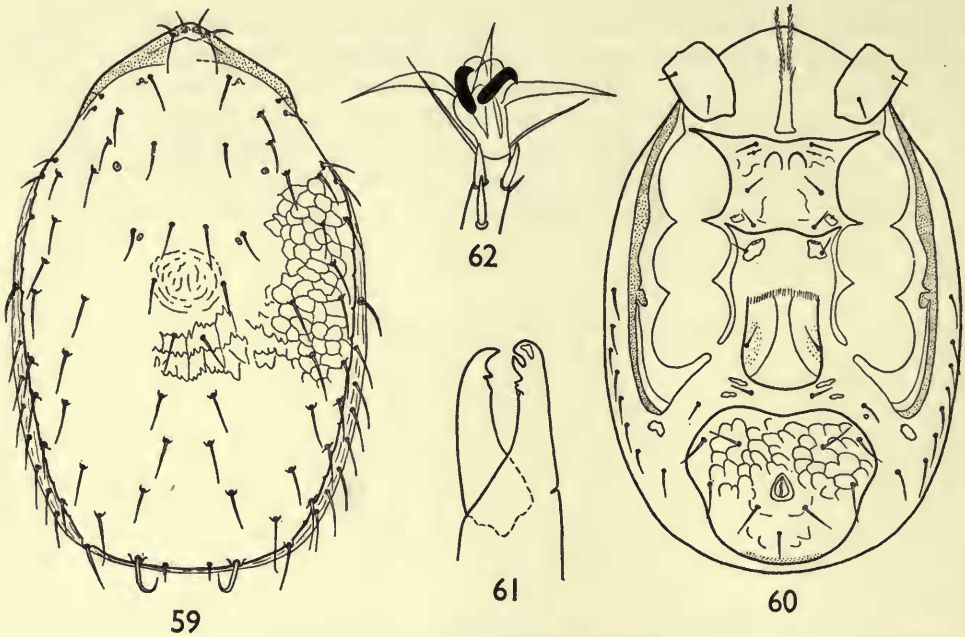
Tritosternum well developed with pilose laciniae. Sternal shield with some sculpturing, and with two semicircular marks anteriorly, and bearing three pairs of simple setae (Text-fig. 60). Genital shield convex posteriorly and bearing a single pair of setae. Ventri-anal shield slightly wider than long (162–190 μ long × 177–228 μ wide), reticulated, and bearing nine simple setae. Between the genital and ventri-anal shields lie four small sclerotized plates. Stigma situated between coxae III and IV; peritreme extending posterior to coxa IV. Metapodal plates narrow.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged and typical of the genus. The dentition of the chelicera is shown in Text-fig. 61.

Leg I (578–782 μ long) with the tarsus (144–184 μ) longer than the tibia (101–126 μ); claws small, pulvillus short. Setae on tarsus and tibia fine, those on remaining segments stouter. Tarsi II–IV with a pair of lanceolate setae; ambulacra with three acuminate lobes (Text-fig. 62).

Male. Unknown.

DISTRIBUTION. Oudemans (1903) did not state the locality for his type female, but Buitendijk (1945) in his catalogue of the Oudemans Collection gives the locality as Borkum Island, Germany. Willmann (1952) records the species from the North Sea island of Wangerooge, and says it is found as far up as Lapland. We have examined specimens from the following localities: Kirkstone Pass, River Brathey and High Pike, Ambleside, Westmorland; Rambulls Moor, Ilkley, Yorkshire;



FIGS. 59–62. *Sejus necorniger* (Oudemans), female. Fig. 59, dorsum. Fig. 60, venter. Fig. 61, chelicera. Fig. 62, tarsus II.

Hathersage, Derbyshire; Sea Houses, Northumberland; Burton Marsh, Cheshire; Llyn Idwal, Caernarvonshire; South Wales; Washford, Somerset; Kiel, Germany; Ohrid, Montenegro; and Grabouw, Transvaal.

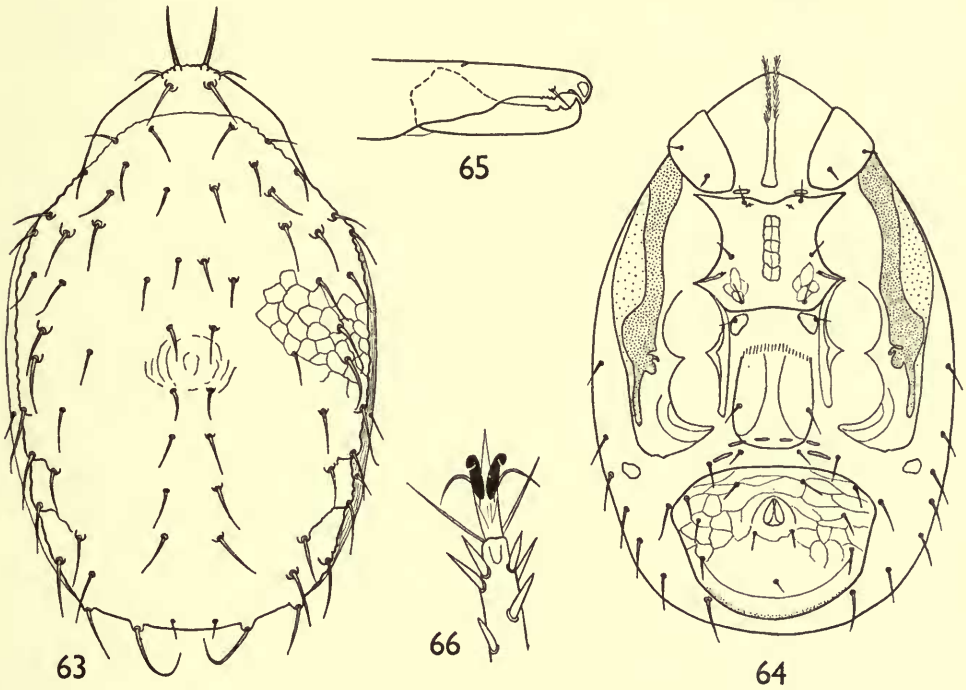
Sejus borealis (Berlese) comb. nov.

Ameroseius borealis Berlese, A., 1904, *Redia*, **1** : 259.
Episeius montanus Willmann, C., 1949, *Veröff. Mus. Nat. Bremen, No. 1A* : 120. syn. nov.
Episeius montanus Willmann, C., 1952, *Veröff. Inst. Meeresf. Bremerhaven*, **1** : 148.
Episeius montanus Willmann, C., 1952, *SB. öst. Akad. Wiss., Abt.* 1, **162** : 462.

FEMALE. Dorsal shield (570–581 μ long × 361–371 μ wide) covered by a reticulated pattern (Text-fig. 63). "Anterior dorsal shield" bears twenty-one pairs of simple setae; verticals anteriorly projected. "Posterior dorsal shield" bears

fifteen pairs of simple setae ; J5 are at the most half the length of J4. The majority of the dorsal setae arise from small tubercles. The distribution and relative length of the setae and the ornamentation of the dorsal shield are shown in the Text-fig.

Tritosternum well developed and flanked at its base by a pair of narrow pre-endopodal shields. Sternal shield with a narrow longitudinal reticulated area, and bearing three pairs of simple setae (Text-fig. 64). Genital shield convex posteriorly and bearing a single pair of setae. Ventri-anal shield broader than long (139–164 μ long × 202–205 μ wide), reticulated and bearing eleven simple setae. Between the genital and ventri-anal shield lies a row of four small plates, and, posterior to these,



FIGS. 63–66. *Sejus borealis* (Berlese), female. Fig. 63, dorsum. Fig. 64, venter. Fig. 65, chelicera. Fig. 66, tarsus II.

two smaller plates. Stigma situated between coxae III and IV with the posterior prolongation of the peritreme extending to about the middle of coxa IV. Metapodal plates circular.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged and typical of the genus. The dentition of the chelicera is shown in Text-fig. 65.

Leg I (576–580 μ long) with the tarsus (137–139 μ) longer than the tibia (108–114 μ). Setae on tarsus and tibia I fine ; ambulacrum and claws small ; remaining setae stouter and arising from small protuberances. Tarsi II–IV with a pair of

lanceolate setae, and ambulacra with three acuminate lobes (Text-fig. 66). Setae of legs II–IV arising mainly from small protuberances.

MALE. Unknown.

DISTRIBUTION. Berlese's (1904) description of the female of *Ameroseius borealis* is based on material collected by Thor in Norway. His type specimen has been examined by us. Willmann (1949) described *Episeius montanus* from Poland ; in 1952 he recorded the species from the North Sea island of Wangerooge, and in 1953 he recorded it from several localities in the eastern Alps. The writers have examined five females from Soil Insecticide Experiment, Bellahouston Park, Glasgow, October, 1951, collected by J. G. Sheals ; one female from ditch-side debris near Markfield, Leicestershire, 19.iv.1958, collected by P. N. Lawrence ; and one female from wet moss at West Carter Basin, Labrador, 17.viii.1958, also collected by P. N. Lawrence.

Sejus serratus (Halbert) comb. nov.

Paraseius serratus Halbert, J. N., 1915, *Proc. R. Irish Acad.*, **39**ii : 78.
Lasioseius (*L.*) *serratus*, Schweizer, J., 1922, *Ver. naturf. Ges. Basel*, **33** : 43.
Episeius serratus, Schweizer, J., 1949, *Rés. Rech. sci. Parc Nat. Suisse, N.F.* **2** : 63.
Episeius serratus, Willmann, C., 1949, *Veröff. Mus. Bremen*, **1**A : 120 ; 1954, In *Spiegel, Land-Tierwelt*, 15 *Ordnung, Acarina :* 351.

FEMALE. Dorsal shield (440–570 μ long × 286–351 μ wide) with a pattern of irregular reticulations and depressions (Text-fig. 67). " Anterior dorsal shield " with twenty-one pairs of simple setae ; verticals on small tubercles and directed laterally. " Posterior dorsal shield " with fifteen pairs of simple setae. The distribution of the dorsal setae and the ornamentation of the dorsal shield are shown in the Text-fig.

Tritosternum with a narrow base and pilose laciniae. Sternal shield with some sculpturing laterally, with a pair of circular marks anteriorly, and bearing three pairs of simple setae (Text-fig. 68). Genital shield convex posteriorly and bearing a single pair of setae. Ventri-anal shield slightly wider than long (152–170 μ long × 165–200 μ wide), reticulated anteriorly and bearing nine simple setae. Between the genital and ventri-anal shields lie a row of small plates and behind these a further pair. Stigma situated between coxae III and IV ; peritreme extending posterior to coxa IV. Metapodal plates small.

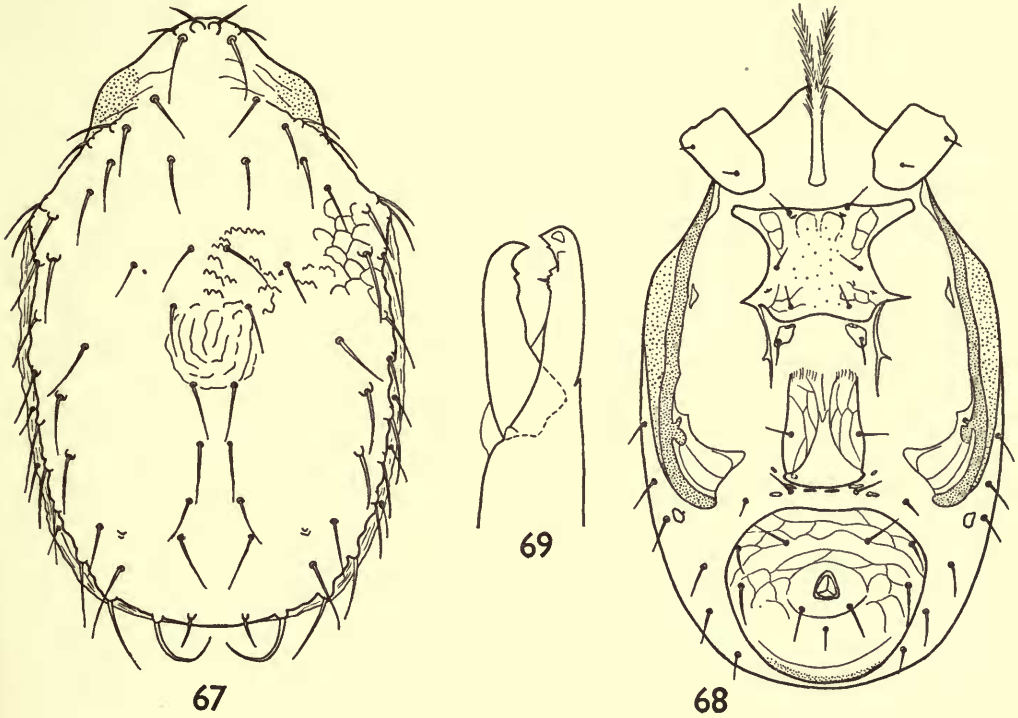
Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged and typical of the genus. The dentition of the chelicera is shown in Text-fig. 69.

Leg I (528–718 μ long) with the tarsus (121–149 μ) shorter than the tibia (139–164 μ). Claws on leg I small ; pulvillus short. Setae on tarsus and tibia fine ; those on remaining segments stouter. Tarsi II–IV with a pair of lanceolate setae ; ambulacra with three acuminate lobes.

MALE. This sex is described and figured by Schweizer (1922 & 1949).

DISTRIBUTION. Halbert (1915), in the Clare Island Survey, described this species from specimens " Found commonly in sphagnum, gathered on the slopes of Croagh-

patrick at an elevation of about 600 ft., during the month of October ". Schweizer (1922 & 1949) records both sexes from the Swiss Alps, and Willmann (1954) records the female from Austria. The Museum Collections contain the following specimens : one female in *Sphagnum* from marsh, Raise Beck, Grasmere, Westmorland, 900 ft., 29.vi.1951, collected by J. T. Salmon ; three females in mosses and liverworts on rocks by south-east bank of Rydal Water, Westmorland, 29.vi.1956, collected by



FIGS. 67–69. *Sejus serratus* (Halbert), female. Fig. 67, dorsum. Fig. 68, venter. Fig. 69, chelicera.

P. N. Lawrence ; one female in *Sphagnum* at Blelham Tarn, Lancashire, 22.iii.1955, collected by R. J. Elliott ; one female in *Sphagnum* at Box Hill, Surrey, 30.vi.1951, collected by E. Duffey ; and two females in moss at West Carter Basin, Labrador, 7.viii.1958, collected by P. N. Lawrence.

Sejus curtipes (Halbert) comb. nov.

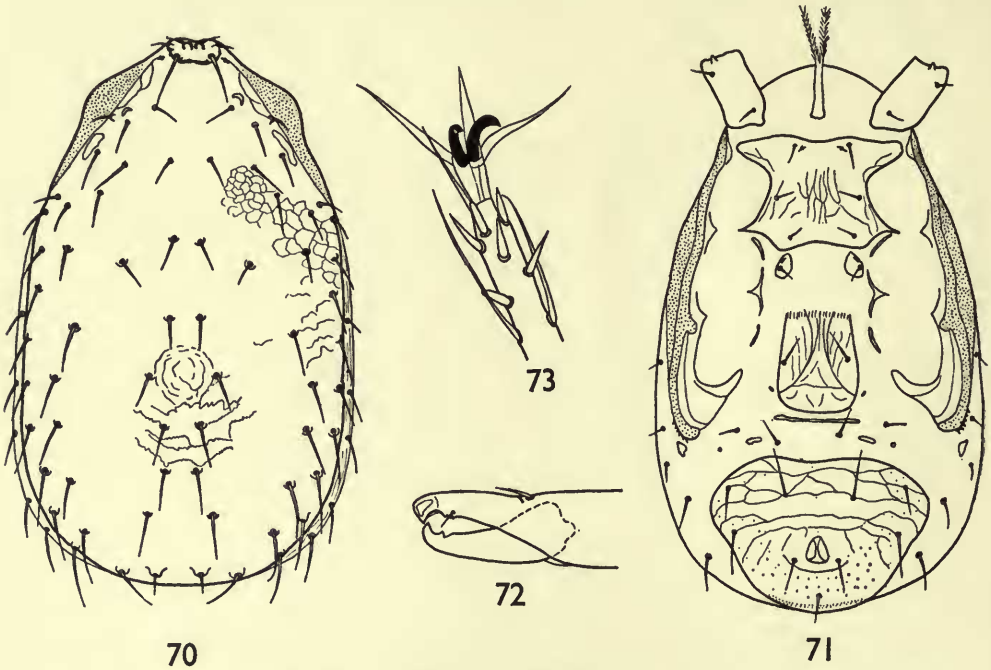
Lasioseius (*Episeius*) *glaber* var. *curtipes* Halbert, J. N., 1923., *J. Linn. Soc. Lond.* (*Zool.*), **35** : 370.

Episeius ovaspini Schweizer, J., 1949, *Rés. Rech. sci. Parc Nat. Suisse, N.F.* **2** : 69, syn. nov.

FEMALE. Dorsal shield (456–529 μ long × 258–320 μ wide) with a reticulated pattern (Text-fig. 70). " Anterior dorsal shield " with fifteen pairs of simple setae.

The distribution of the setae, and the ornamentation of the dorsal shield are shown in the Text-fig.

Tritosternum with pilose laciniae. Sternal shield very faintly sculptured and bearing three pairs of simple setae (Text-fig. 71). Genital shield convex posteriorly and bearing a single pair of setae. Ventri-anal shield wider than long (120–160 μ long × 154–218 μ wide), reticulated in its anterior half, and bearing nine simple setae. Between the genital and ventri-anal shields lies a pair of long narrow platelets and behind these two shorter platelets. Stigma situated between coxae III and IV ; peritreme extending posterior to coxa IV. Metapodal plates small.



FIGS. 70–73. *Sejus curtipes* (Halbert), female. Fig. 70, dorsum. Fig. 71, venter. Fig. 72, chelicera. Fig. 73, tarsus II.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged and typical of the genus. The dentition of the chelicera is shown in Text-fig. 72.

Leg I (443–518 μ long) with the tarsus (113–139 μ) longer than the tibia (68–88 μ). Claws on leg I small, pulvillus short ; setae on tarsus and tibia fine, those on remaining segments stouter. Tarsi II–IV with a pair of lanceolate setae ; ambulacra with three acuminate lobes (Text-fig. 73).

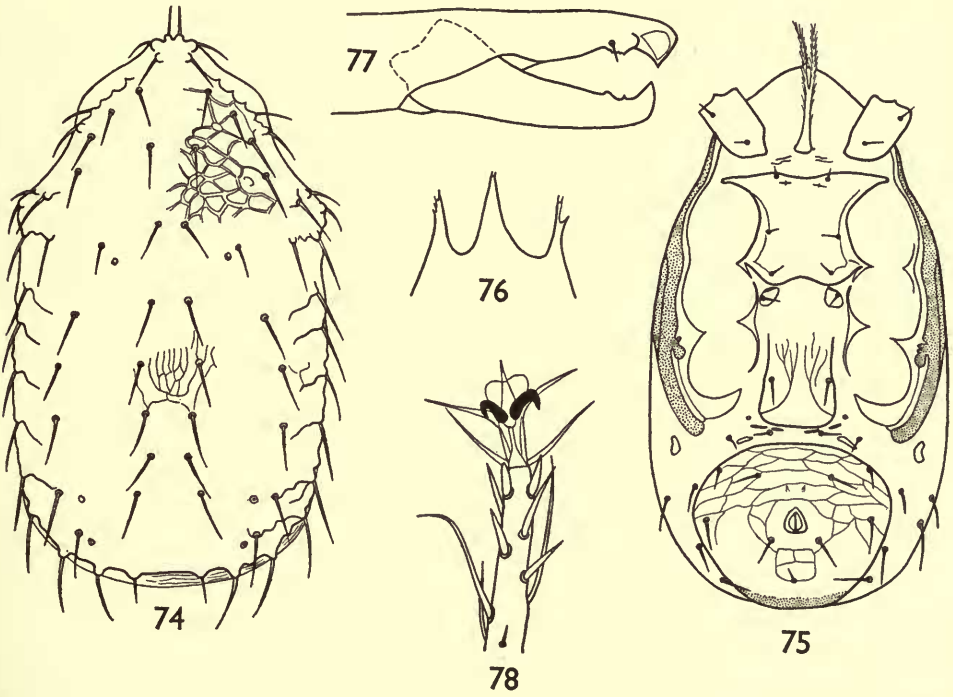
MALE. This sex is described and figured by Schweizer (1949 : 71).

DISTRIBUTION. Halbert's (1923) description of *Lasioseius* (*Episeius*) *glaber* var.

curtipes is based on two females found amongst wet moss on Lambay Island, Co. Dublin, in July. Schweizer's (1949) description of *Episeius ovaspini* is based on five males and thirty-two females collected in wet mosses in the Swiss National Park. We have examined Halbert's type and a number of Schweizer's type series; also five females from the summit of Snowdon, Caernarvonshire, August, 1951, collected by E. Duffey; and eleven females from Jamaica, B.W.I., collected by P. F. Bellinger; seven in moss on concrete, Coolsbade, Portland, 17.vii.1955, and four in moss, west side of John Cove Mountains, 2,300 ft., 25.v.1956.

Sejus cassiteridum sp. nov.

FEMALE. Dorsal shield (435–467 μ long × 237–258 μ wide) heavily sculptured and with a network of ridges and depressions. Lateral margins irregular (Text-fig. 74). "Anterior dorsal shield" with twenty-one pairs of simple setae; verticals



FIGS. 74–78. *Sejus cassiteridum* sp. nov., female. Fig. 74, dorsum. Fig. 75, venter. Fig. 76, tectum. Fig. 77, chelicera. Fig. 78, tarsus II.

close together and projecting anteriorly. "Posterior dorsal shield" with fifteen pairs of simple setae of which J5 are the shortest. The distribution and relative lengths of the dorsal setae and the ornamentation of the dorsal shield are shown in the Text-fig.

Tritosternum well developed with pilose laciniae. Sternal shield almost entirely without sculpturing, and bearing three pairs of short simple setae (Text-fig. 75). Genital shield slightly convex posteriorly and bearing a single pair of setae. Ventri-anal shield wider than long (115–139 μ long × 152–165 μ wide), reticulated and bearing nine simple setae. Between the genital and ventri-anal shields lie six small sclerotized plates. Stigma situated between coxae III and IV; peritreme and peritrematal shields extending posterior to coxa IV. Metapodal plates small.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum (Text-fig. 76) three-pronged. The dentition of the chelicera is shown in Text-fig. 77.

Leg I (372–387 μ long) with the tarsus (99–106 μ) almost twice the length of the tibia (58–63 μ). Setae on tarsus and tibia fine, those on other segments stouter; pulvillus short and tarsal claws small. Tarsi II–IV with a pair of lanceolate setae; ambulacra with three acuminate lobes (Text-fig. 78).

Male. Unknown.

Locality. England. The holotype female (1959.1.20.92) and twenty-five paratype females (1959.1.20.93–102) occurring with *Platyseius subglaber* (Oudemans) in the roots of rushes by Big Pool, St. Agnes, Isles of Scilly, Cornwall, 19.ix.1957, collected by K. H. Hyatt.

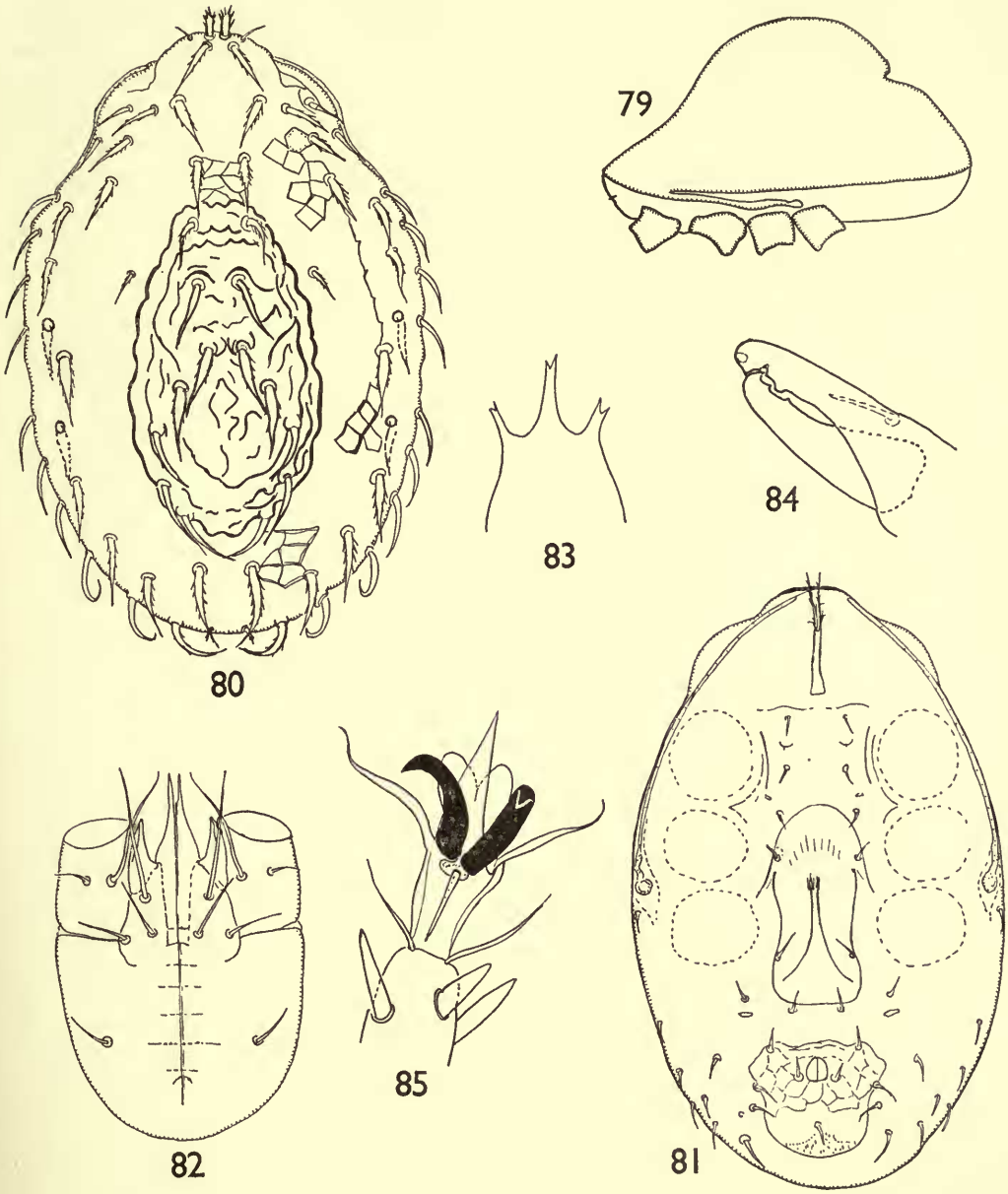
The writers have examined a single female (1959.1.20.193) from *Sphagnum*, Blelham Tarn, Windermere, Lancashire, 22.iii.1955, collected by R. J. Elliott, which differs from the St. Agnes specimens by having the sternal shield conspicuously reticulated. The measurements of this specimen all fall within the ranges given above for *Sejus cassiteridum* (viz.: dorsal shield 446 × 247 μ, ventri-anal shield 126 × 157 μ, leg I 392 μ, tarsus I 101 μ, tibia I 63 μ).

Sejus dromadis sp. nov.

Female. Dorsal shield (393 μ long × 230 μ wide) oval in outline, heavily reticulated, and steeply humped dorso-medially (Text-fig. 79). "Anterior dorsal shield" with twenty-three pairs of setae; "posterior dorsal shield" with fifteen pairs of setae (Text-fig. 80). The verticals are stout and spiculate, and the remainder of the setae are stout and pilose. The distribution and relative lengths of the dorsal setae, and the form of the dorsal shield are shown in the Text-figs.

Tritosternum less strongly developed than in the majority of species of *Sejus*. Laciniae pilose. Sternal shield weakly sclerotized with three pairs of simple setae. Genital shield broadly flask-shaped with one pair of setae (Text-fig. 81). Ventri-anal shield small (83 μ long × 88 μ wide), weakly sclerotized, and bearing seven simple setae. Two small sclerotized plates lie on the interscutal membrane between the genital and ventri-anal shields. Stigma situated between coxae III and IV, with the peritreme not extending posterior to the stigma. Peritrematal shield extending a little posterior to the stigma.

Venter of gnathosoma with rostral and internal palptrochanter setae long and whip-like (Text-fig. 82). All setae on pedipalp simple. Tectum three-pronged and



FIGS. 79–85. *Sejus dromadis* sp. nov., female. Fig. 79, lateral view of dorsum. Fig. 80, dorsal shield. Fig. 81, venter. Fig. 82, venter of gnathosoma. Fig. 83, tectum. Fig. 84, chelicera. Fig. 85, tarsus II.

typical of the genus (Text-fig. 83). The dentition of the chelicera is shown in Text-fig. 84.

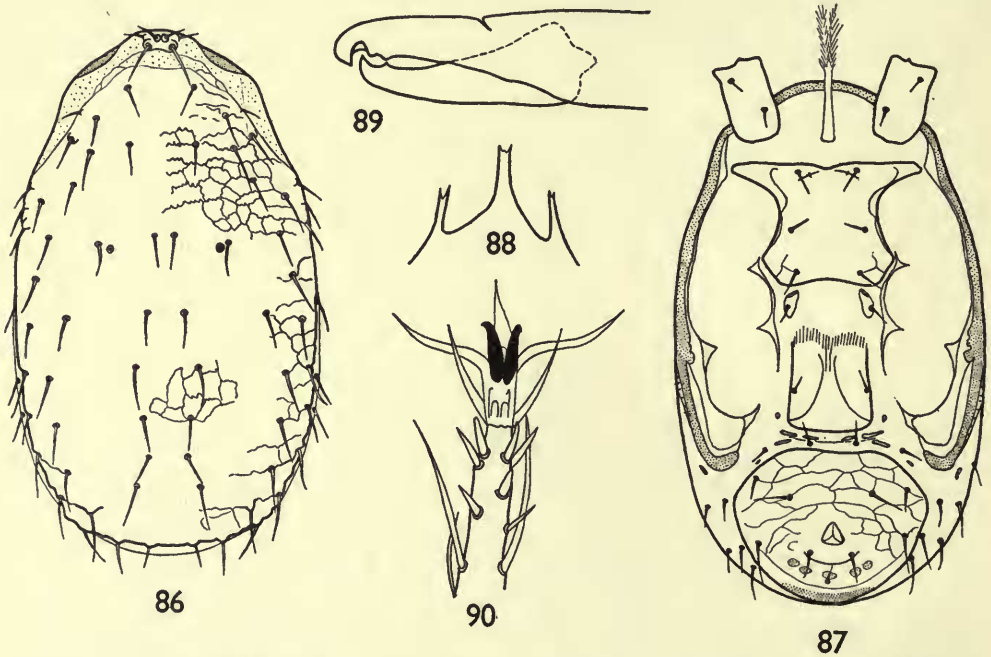
Leg I (about 300 μ long) with the tarsus (70 μ) longer than the tibia (56 μ). Setae on tarsus fine; those on remaining segments stouter, and in some cases spiculate and arising from small protuberances. Tarsi II–IV with a pair of lanceolate setae. Ambulacrum of tarsus I short and claws small. Pulvilli of tarsi II–IV produced into three acuminate lobes (Text-fig. 85).

MALE. Unknown.

LOCALITY. England. A single female (1959.1.20.103) in cow dung at Canterbury, Kent, collected by the late Dr. E. Warren.

Sejus areolatus sp. nov.

FEMALE. Dorsal shield (361 μ long × 216 μ wide) completely covered by a fine reticulated pattern; margin irregular (Text-fig. 86). "Anterior dorsal shield"



FIGS. 86–90. *Sejus areolatus* sp. nov., female. Fig. 86, dorsum. Fig. 87, venter. Fig. 88, tectum. Fig. 89, chelicera. Fig. 90, tarsus II.

with twenty-one pairs of simple setae; verticals with their bases touching, and considerably shorter than post-verticals. "Posterior dorsal shield" with fifteen pairs of simple setae. The distribution of the setae and the ornamentation of the dorsal shield are shown in the Text-fig.

Tritosternum well developed with pilose laciniae. Sternal shield almost plain,

with three pairs of simple setae (Text-fig. 87). Genital shield bearing a single pair of setae. Ventri-anal shield wider than long (106 μ long × 132 μ wide), reticulated, with five small oval areas forming a crescent behind the paranals, and bearing nine simple setae. Between the genital and ventri-anal shields lies a row of four sclerotized platelets, and behind these two smaller ones. Stigma situated between coxae III and IV ; peritreme extending posterior to coxa IV. Metapodal plates small and narrow.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged (Text-fig. 88), the centre prong being in advance of the lateral ones. The dentition of the chelicera is shown in Text-fig. 89.

Leg I (c. 330 μ long) with the tarsus (88 μ) longer than the tibia (50 μ). Setae on tarsus and tibia fine, those on remaining segments stouter ; claws small, on short pulvillus. Tarsi II–IV with a pair of lanceolate setae ; ambulacra with three acuminate lobes (Text-fig. 90).

Male. Unknown.

Locality. Uganda. A single female, the holotype (1959.1.20.104), from rushes and grassland bordering hot springs, sixteen miles east-north-east of Bundibugyo, Ruwenzori, 29.viii.1952, collected by G. Owen Evans.

Sejus kennedyi sp. nov.

Female. Dorsal shield (456–467 μ long × 268–279 μ wide) covered by a network of small depressions and ridges (Text-fig. 91). " Anterior dorsal shield " with twenty-one pairs of simple setae ; verticals separated by the width of their bases and projecting anteriorly. " Posterior dorsal shield " with fifteen pairs of simple setae of which J5 are short. The distribution and relative lengths of the dorsal setae and the ornamentation of the dorsal shield are shown in the Text-fig.

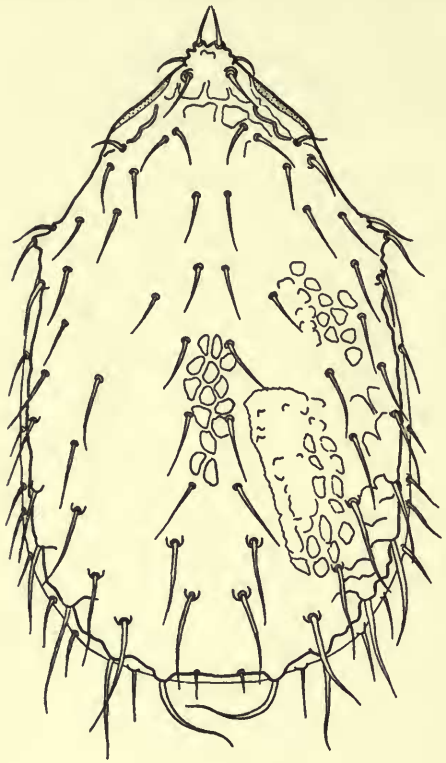
Tritosternum with a pair of pilose laciniae. Sternal shield plain and bearing three pairs of simple setae (Text-fig. 92). Genital shield lightly reticulated, convex posteriorly, and bearing one pair of simple setae. Ventri-anal shield broader than long (139–144 μ long × 208–213 μ wide), reticulated, and bearing nine simple setae. Between the genital and ventri-anal shields lie two narrow sclerotized platelets. Stigma situated between coxae III and IV ; peritreme crenate along its internal margin, and with no post-stigmal prolongation. Peritrematal shield tapering and extending posterior to coxa IV. Metapodal shields obliquely situated.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged and typical of the genus. Chelicerae typical.

Leg I (354 μ long) with the tarsus (88 μ) longer than the tibia (63 μ). Setae on tarsus I fine, ambulacrum and claws small ; setae on remaining segments stouter and arising from small protuberances. Tarsi II–IV with a pair of lanceolate setae and ambulacra with three acuminate lobes.

Male. Unknown.

LOCALITY. Uganda. The holotype female (1959.1.20.105) and three paratype females (1959.1.20.106–108) from litter under hardwood stand, Bundibugyo, Ruwenzori, 3,400 ft., 2.ix.1952, collected by G. Owen Evans. This species is named after Professor W. Q. Kennedy, University of Leeds, leader of the British Ruwenzori Expedition, 1952.



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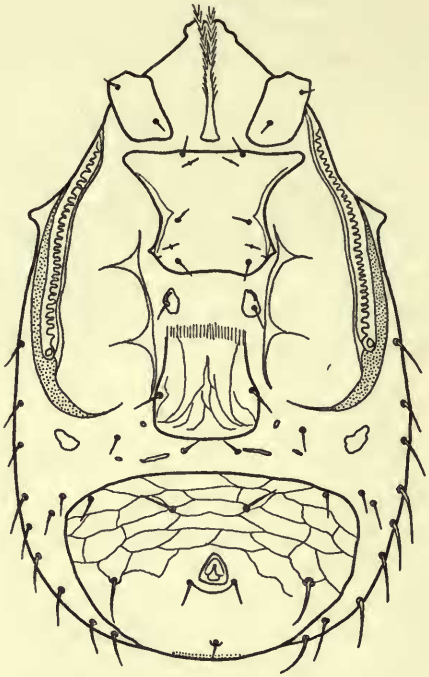

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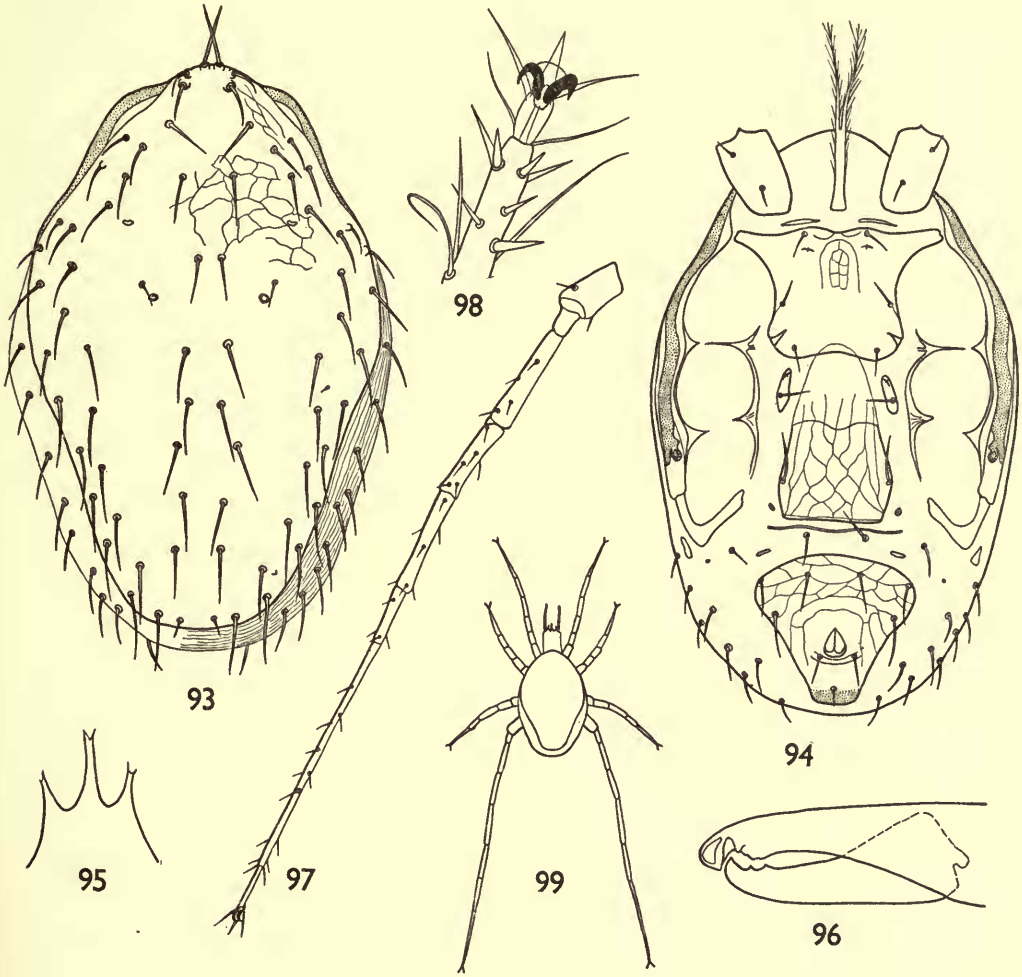
FIGS. 91–92. *Sejus kennedyi* sp. nov., female. Fig. 91, dorsum. Fig. 92, venter.

Sejus phalangioides sp. nov.

FEMALE. Dorsal shield (398–410 μ long × 250–253 μ wide) attenuated in the posterior half, and covered by a fine reticulated pattern (Text-fig. 93). " Anterior dorsal shield " with twenty-one pairs of simple setae, verticals projecting anteriorly ; " posterior dorsal shield " with fifteen pairs of simple setae, of which J5 are the shortest. The distribution and relative lengths of the dorsal setae are shown in the Text-fig.

Tritosternum well developed and flanked at its base by a pair of narrow pre-endopodal shields. Sternal shield with a reticulated area anteriorly, and bearing three pairs of simple setae (Text-fig. 94). Genital shield broad, truncated posteriorly,

distinctly reticulated, and bearing a single pair of setae. Ventri-anal shield slightly broader than long (101 μ long $\times$ 116 μ wide), attenuated posteriorly, reticulated, and bearing nine simple setae. Between the genital and ventri-anal shields lies a narrow, undulated, sclerotized strip of chitin, and two platelets. Stigma situated between coxae III and IV, peritreme scarcely extending posterior to the stigma.



FIGS. 93–99. *Sejus phalangioides* sp. nov., female. Fig. 93, dorsum. Fig. 94, venter. Fig. 95, tectum. Fig. 96, chelicera. Fig. 97, leg IV. Fig. 98, tarsus II. Fig. 99, entire mite, showing relative lengths of legs and idiosoma.

Peritrematal shield fused with well developed podal plates, which extend posterior to coxa IV. Metapodal plates small, situated close to podal plates.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-

like. All setae on pedipalp simple. Tectum (Text-fig. 95) three-pronged and typical of the genus. The dentition of the chelicera is shown in Text-fig. 96.

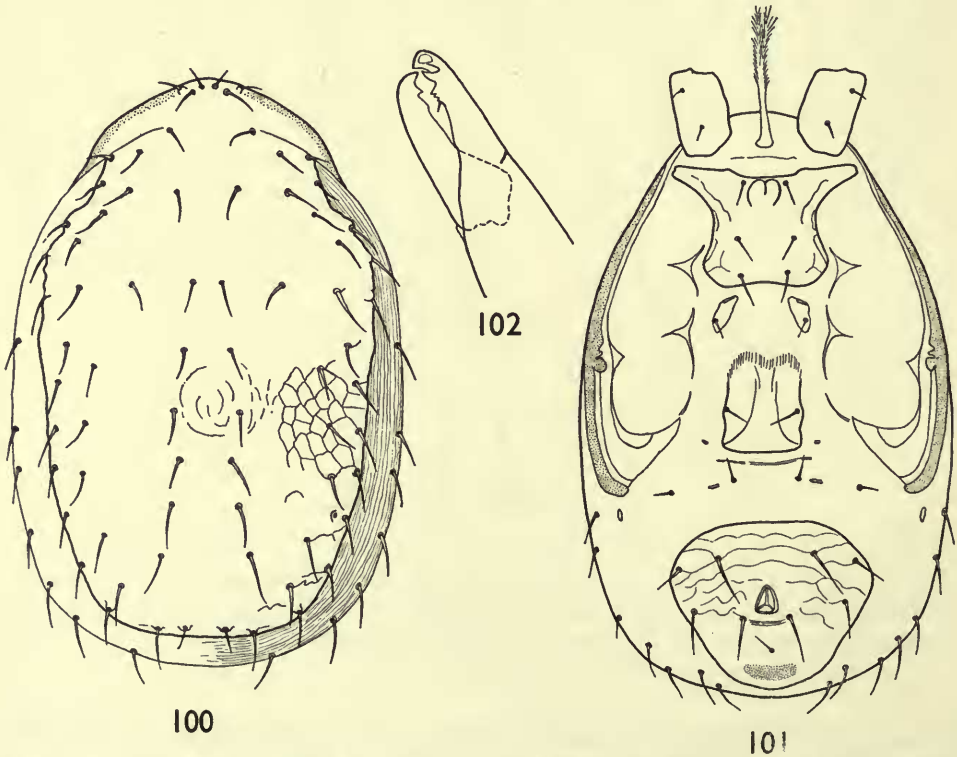
Leg I (536 μ long) has the tarsus (139 μ) longer than the tibia (100–106 μ). Setae on tarsus I very fine; those on remaining segments stouter. Ambulacrum of tarsus I short, claws small. Leg IV (954 μ long) more than twice the length of the idiosoma, with the tarsus about 400 μ long (Text-fig. 97). Tarsi II–III with a pair of lanceolate setae, and pulvilli produced into three acuminate lobes (Text-fig. 98). Tarsus IV without lanceolate setae, and pretarsus long (55 μ). The relative lengths of the legs and the idiosoma are shown in Text-fig. 99.

MALE. Unknown.

LOCALITY. Uganda. The holotype female (1959.1.20.109) and one paratype female (1959.1.20.110) in grassland in forest clearing near stream, nine miles north-east of Bundibugyo, Ruwenzori, 2,850 ft., 24.viii.1952, collected by G. Owen Evans.

Sejus signatus sp. nov.

FEMALE. Dorsal shield (581 μ long × 371 μ wide) weakly sclerotized and covered by a reticulated pattern (Text-fig. 100). "Anterior dorsal shield" with twenty



FIGS. 100–102. *Sejus signatus* sp. nov., female. Fig. 100, dorsum. Fig. 101, venter. Fig. 102, chelicera.

pairs of simple setae ; verticals considerably shorter than post-verticals, and well separated. " Posterior dorsal shield " with fifteen pairs of simple setae. The distribution of the dorsal setae and the ornamentation of the dorsal shield are shown in the Text-fig.

Tritosternum with pilose laciniae. Sternal shield weakly sclerotized, with an M-shaped mark anteriorly and bearing three pairs of simple setae (Text-fig. 101). Genital shield weakly sclerotized and bearing one pair of setae. Ventri-anal shield wider than long (152 μ long × 197 μ wide), weakly sclerotized and bearing nine simple setae. Between the genital and ventri-anal shields lie a narrow sclerotized strip and two platelets. Stigma situated between coxae III and IV ; peritreme extending posterior to coxa IV. Metapodal plates very small.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged and typical of the genus. The dentition of the chelicera is shown in Text-fig. 102.

Leg I (573 μ long) with the tarsus (141 μ) longer than the tibia (99 μ). Claws on leg I small, inconspicuous, pulvillus short. Setae on tarsus and tibia fine, those on other segments stouter. Tarsi II–IV with a pair of lanceolate setae ; ambulacra with three acuminate lobes.

Male. Unknown.

Locality. Uganda. A single female, the holotype (1959.1.20.111), from damp decaying vegetation and soil under elephant-grass at Ibanda, Ruwenzori, 26.vii.1952, 4,760 ft., collected by G. O. Evans.

Sejus spinipes sp. nov.

Female. Dorsal shield (392 μ long × 216 μ wide) covered by a light reticulated pattern (Text-fig. 103). " Anterior dorsal shield " bears twenty-one pairs of simple setae ; verticals anteriorly projecting. " Posterior dorsal shield " bears 15 pairs of simple setae ; J5 are as long as J4. The majority of the dorsal setae arise from small tubercles. The distribution and relative lengths of the dorsal setae, and the ornamentation of the dorsal shield are shown in the Text-fig.

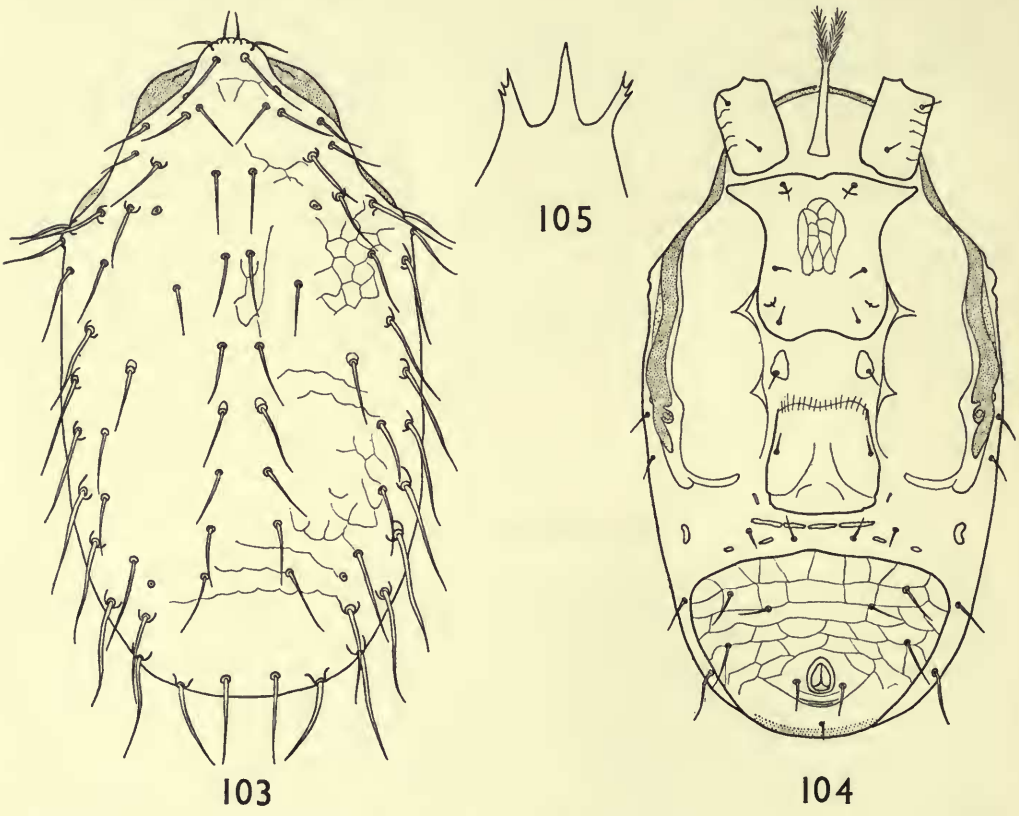
Tritosternum well developed with pilose laciniae. Sternal shield with the central area reticulated, and bearing three pairs of short simple setae (Text-fig. 104). Genital shield with a single pair of simple setae. Ventri-anal shield broader than long (119 μ long × 157 μ wide), distinctly reticulated and bearing nine simple setae. Between the genital and ventri-anal shields lies a line of four contiguous sclerotized plates, and, postero-laterally to these, four smaller plates. Stigma situated between coxae III and IV, with the posterior prolongation of the peritreme extending to about the middle of coxa IV. The peritrematal shield extends posterior to coxa IV. Metapodal plates small.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum (Text-fig. 105) three-pronged. The dentition of the chelicera is typical of the genus.

Leg I (c. 330 μ long) with the tarsus (76 μ) longer than the tibia (53 μ). Setae on tarsus I fine ; ambulacrum and claws small ; many of the setae on remaining segments stout and arising from conspicuous protuberances. Tarsi II–IV with a pair of lanceolate setae, and ambulacra with three acuminate lobes. Setae of legs II–IV mainly stout and arising from conspicuous protuberances.

MALE. Unknown.

LOCALITIES. Uganda and Sudan. The holotype female (1959.1.20.112) from



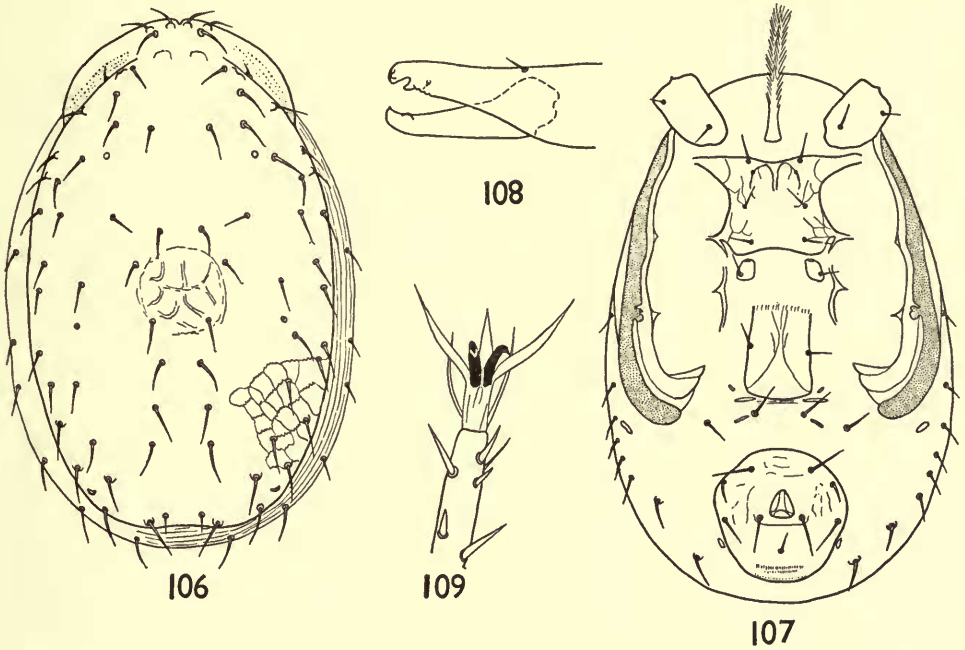
FIGS. 103–105. *Sejus spinipes* sp. nov., female. Fig. 103, dorsal shield. Fig. 104, venter. Fig. 105, chelicera.

rushes and grassland bordering hot springs, sixteen miles east-north-east of Bundibugyo, Ruwenzori, Uganda, 29.viii.1952, collected by G. O. Evans ; and two paratype females (1959.1.20.113–114) on *Papyrus* in the Sudd Region, Southern Sudan, collected by I. W. B. Thornton.

Sejus nepalensis sp. nov.

FEMALE. Dorsal shield (456–498 μ long × 289–299 μ wide) completely covered by a fine reticulated pattern (Text-fig. 106). " Anterior dorsal shield " with twenty-one pairs of simple setae ; vertical setae relatively short and directed laterally ; vertex not well developed. " Posterior dorsal shield " with fifteen pairs of simple setae (in the holotype seta Z1 is missing from the left side) ; seta J5 is the shortest. All dorsal setae arise from small tubercles. The distribution and relative lengths of the setae and the ornamentation of the dorsal shield are shown in the Text-fig.

Tritosternum well developed, with pilose laciniae, sternal shield with some



FIGS. 106–109. *Sejus nepalensis* sp. nov., female. Fig. 106, dorsum. Fig. 107, venter. Fig. 108, chelicera. Fig. 109, tarsus II.

sculpturing, a pair of circular areas anteriorly, and bearing three pairs of simple setae (Text-fig. 107). Genital shield almost parallel sided and bearing one pair of simple setae. Ventri-anal shield (126 μ long × 124–127 μ wide) almost circular in outline, bearing nine simple setae ; anus more or less central. Between the genital and ventri-anal shields lie about four narrow platelets. Stigma situated between coxae III and IV ; peritreme extending posterior to coxa IV. Metapodal plates very small.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged and typical of the genus. The dentition of the chelicera is shown in Text-fig. 108.

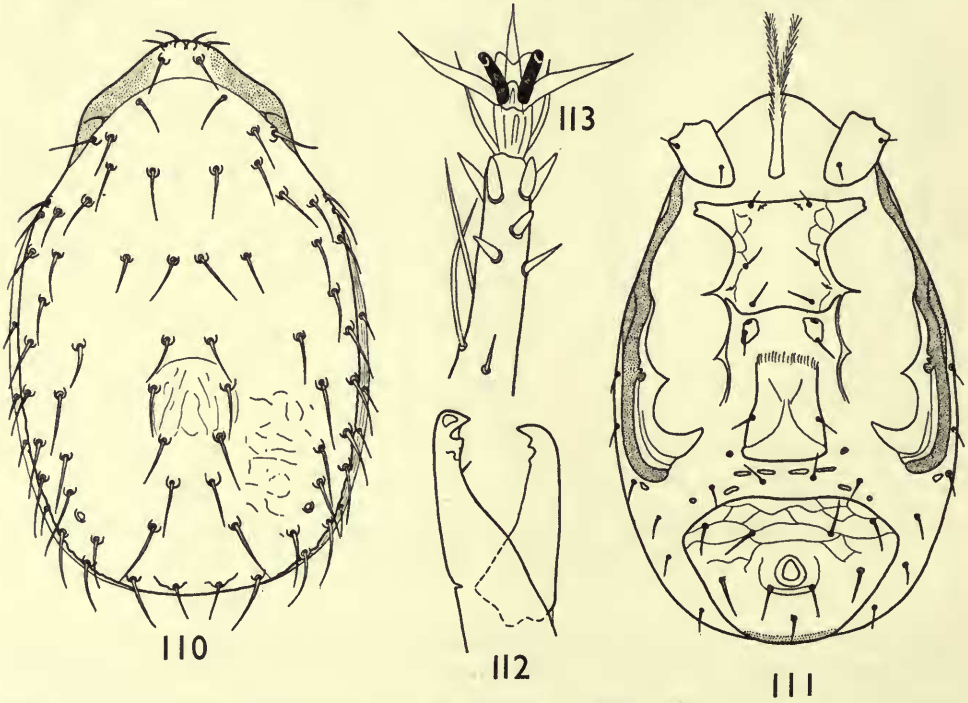
Leg I (630–769 μ long) with the tarsus (126–157 μ) shorter than the tibia (150–195 μ). Setae on tarsus, tibia and genu very fine ; those on remaining segments stouter. Claws very small, pulvillus short. Tarsi II–IV with a pair of lanceolate setae ; ambulacra with three acuminate lobes (Text-fig. 109).

Male. Unknown.

Locality. Nepal. The holotype female (1959.1.20.115) from sandy turf on open grazed hillside facing south at Siklis (28° 22′ N., 84° 6′ E.), 7,000 ft., 20–21.iv.1954 ; and one paratype female (1959.1.20.116) from damp mossy and grassy earth under shade of trees and rocks at Bakhri Kharka (28° 22·5′ N., 84° 7·5′ E.), 5,500 ft., 24.iv.1954, collected by K. H. Hyatt.

Sejus parbatensis sp. nov.

Female. Dorsal shield (402–435 μ long × 237–268 μ wide) covered by an irregular reticulated pattern (Text-fig. 110). " Anterior dorsal shield " with twenty-



Figs. 110–113. *Sejus parbatensis* sp. nov., female. Fig. 110, dorsum. Fig. 111, venter. Fig. 112, chelicera. Fig. 113, tarsus II.

one pairs of simple setae ; verticals with their bases contiguous. " Posterior dorsal shield " with fifteen pairs of simple setae ; setae J5 are more than half the length of J4. All the setae arise from small tubercles. The distribution of the setae, and the ornamentation of the dorsal shield are shown in the Text-fig.

Tritosternum well developed and with pilose laciniae. Sternal shield lightly sculptured and bearing three pairs of simple setae (Text-fig. 111). Genital shield bearing a single pair of setae. Ventri-anal shield wider than long (114–126 μ long $\times$ 157–170 μ wide), reticulated, and bearing nine simple setae. Between the genital and ventri-anal shields lies a row of four narrow platelets, and, posterior to these, two smaller ones. Stigma situated between coxae III and IV ; peritreme extending posterior to coxa IV. Metapodal plates very small.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged and typical of the genus. The dentition of the chelicera is shown in Text-fig. 112.

Leg I (c. 340 μ long) with the tarsus (80–83 μ) longer than the tibia (50–53 μ). Setae on tarsus I very fine ; those on remaining segments stouter ; claws small, on short pulvillus. Tarsi II–IV with a pair of lanceolate setae ; ambulacra with three acuminate lobes (Text-fig. 113).

Male. Unknown.

Locality. Nepal. The holotype female (1959.1.20.117) and one paratype (1959.1.20.118) from litter under a group of deciduous trees forming a canopy on open ground at Gurjakhani (28° 36·5′ N., 83° 13·5′ E.) on the southern slope of the Dhaulagiri Himal, 8,500 ft., 24–27.vi.1954 ; and one paratype female (1959.1.20. 119) in sandy turf on open, grazed hillside facing south at Siklis (28° 22′ N., 84° 6′ E.), 7,000 ft., 20–21.iv.1954, collected by K. H. Hyatt.

Sejus clayi sp. nov.

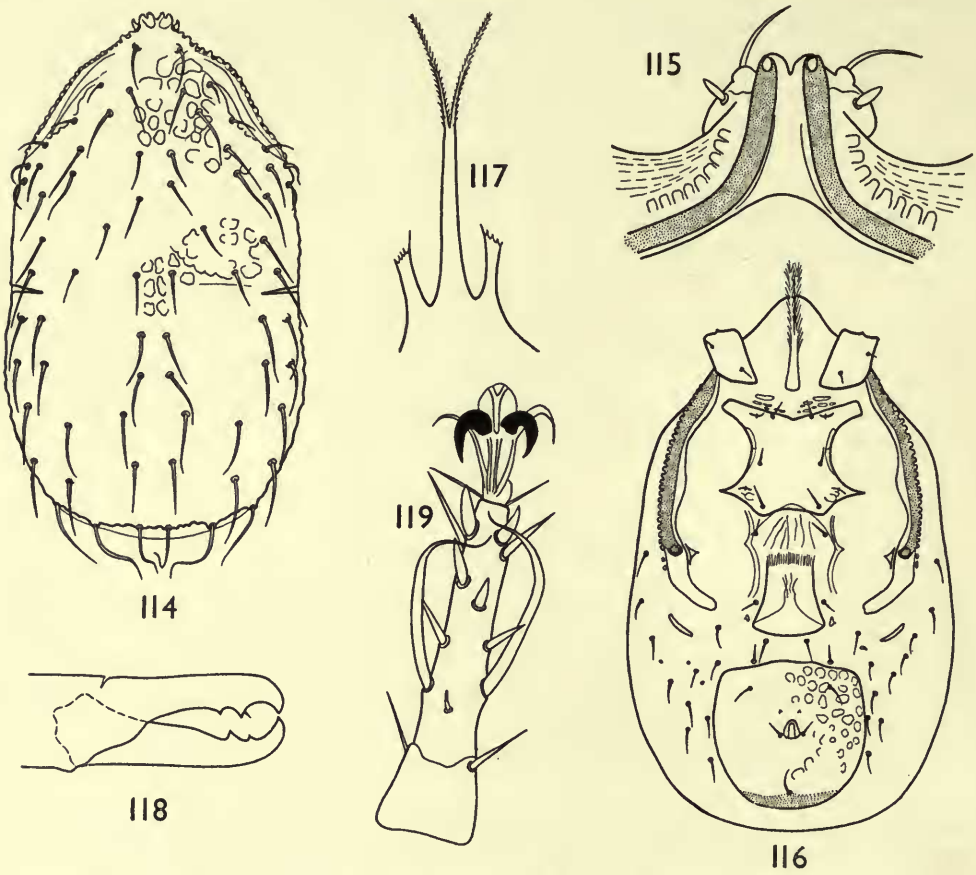
Female. Dorsal shield (661 μ long $\times$ 366 μ wide) with lateral incisions anterior to S1, and heavily marked with circular depressions (Text-fig. 114). Vertex of dorsal shield produced anteriorly (Text-fig. 115). " Anterior dorsal shield " with twenty pairs of setae ; verticals absent, para-verticals short and spatulate, remaining setae simple. " Posterior dorsal shield " with fifteen pairs of simple setae. Setae J5 are long. The distribution and relative lengths of the dorsal setae are shown in Text-fig. 114.

Tritosternum well developed with pilose laciniae and flanked at its base by a number of fragmented pre-endopodal shields. Sternal shield plain and bearing three pairs of simple setae (Text-fig. 116). Genital shield wedge shaped, genital setae off the shield. Ventri-anal shield slightly wider than long (185 μ long $\times$ 190 μ wide), covered with small circular depressions, and bearing only five simple setae. Stigma situated between coxae III and IV, peritreme not extending posterior to the stigma ; external margin of peritreme strongly crenate. Peritrematal shield extending posterior to coxa IV. Metapodal shields narrow and obliquely situated.

Venter of the gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on legs simple. Tectum (Text-fig. 117) differing from that of other members of the genus in that the median prong is strongly produced and terminates in a pair of pilose laciniae. The dentition of the chelicera is shown in Text-fig. 118.

Leg I (481 μ long) with the tarsus (126 μ) longer than the tibia (101 μ). Setae on tarsus I very fine ; those on remaining segments stouter. Tarsi II–IV with a pair of lanceolate setae and ambulacra with lateral lobes acuminate, median lobe short and rounded (Text-fig. 119). Ambulacrum of tarsus I short with claws very small.

Male. Unknown.



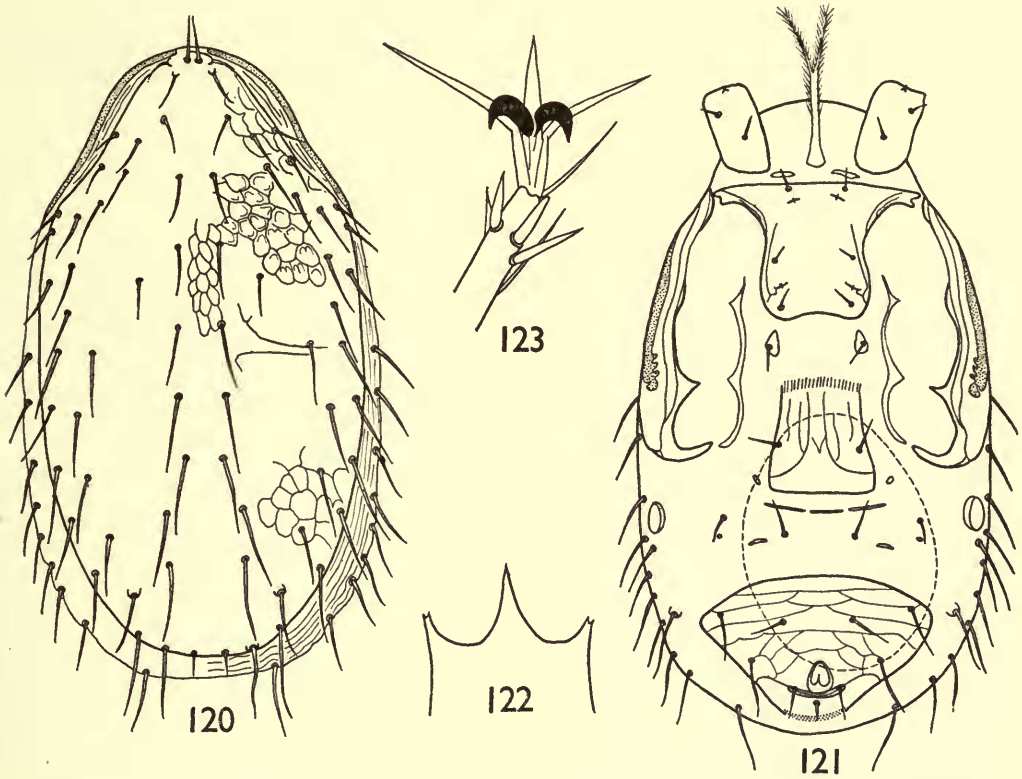
Figs. 114–119. *Sejus clayi* sp. nov., female. Fig. 114, dorsum. Fig. 115, vertex. Fig. 116, venter. Fig. 117, tectum. Fig. 118, chelicera. Fig. 119, tarsus II.

Locality. Sikkim. A single female (1959.1.20.120) from leaves and leaf-mould in wood on steep hillside, Chungtang, 5,120 ft., 16.ii.1952, collected by Dr. Theresa Clay.

Sejus alstoni sp. nov.

Female. Dorsal shield (507–550 μ long × 279–340 μ wide) covered anteriorly by a network of small depressions and ridges, and posteriorly by a reticulated

pattern (Text-fig. 120). " Anterior dorsal shield " with twenty-one pairs of simple setae; verticals close together and directed anteriorly. " Posterior dorsal shield " with fifteen pairs of simple setae, of which J5 are the shortest. The distribution and relative lengths of the dorsal setae, and the ornamentation of the dorsal shield are shown in the Text-fig.



FIGS. 120–123. *Sejus alstoni* sp. nov., female. Fig. 120, dorsum. Fig. 121, venter. Fig. 122, tectum. Fig. 123, tarsus II.

Tritosternum well developed with pilose laciniae, and flanked at its base by a pair of narrow pre-endopodal shields. Sternal shield weakly sclerotized, without ornamentation, and bearing three pairs of simple setae (Text-fig. 121). Genital shield truncated posteriorly and bearing one pair of setae. Ventri-anal shield broader than long (139–152 μ long $\times$ 180–205 μ wide), reticulated, and bearing nine simple setae. Between the genital and ventri-anal shields lies a row of three narrow sclerotized plates. Stigma situated between coxae III and IV; no posterior prolongation of the peritreme. Peritrematal shield extending posterior to coxa IV. Metapodal shields elliptical.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-

like. All setae on pedipalp simple. Tectum (Text-fig. 122) three-pronged and typical of the genus. Chelicerae typical.

Leg I (560–565 μ long) with the tarsus (160 μ) one-and-a-half times as long as the tibia (101–104 μ). Setae on tarsus fine ; claws small ; setae on remaining segments stouter. Tarsi II–IV with a pair of lanceolate setae and ambulacra with three acuminate lobes (Text-fig. 123).

Male. Unknown.

Locality. Indonesia. The holotype female (1959.1.20.121) and two paratype females (1959.1.20.122–123) in decaying vegetation at Bogor, 1954, collected by the late A. H. G. Alston.

Sejus aciculatus sp. nov.

Female. Dorsal shield (329–341 μ long × 223–231 μ wide) very heavily sclerotized, entirely covered by a network of ridges and depressions (Text-fig. 124). " Anterior dorsal shield " with nineteen pairs of simple setae, verticals and paraverticals apparently absent. " Posterior dorsal shield " with fifteen pairs of simple setae. The distribution and relative lengths of the dorsal setae, and the characteristic ornamentation of the dorsal shield are shown in the Text-fig.

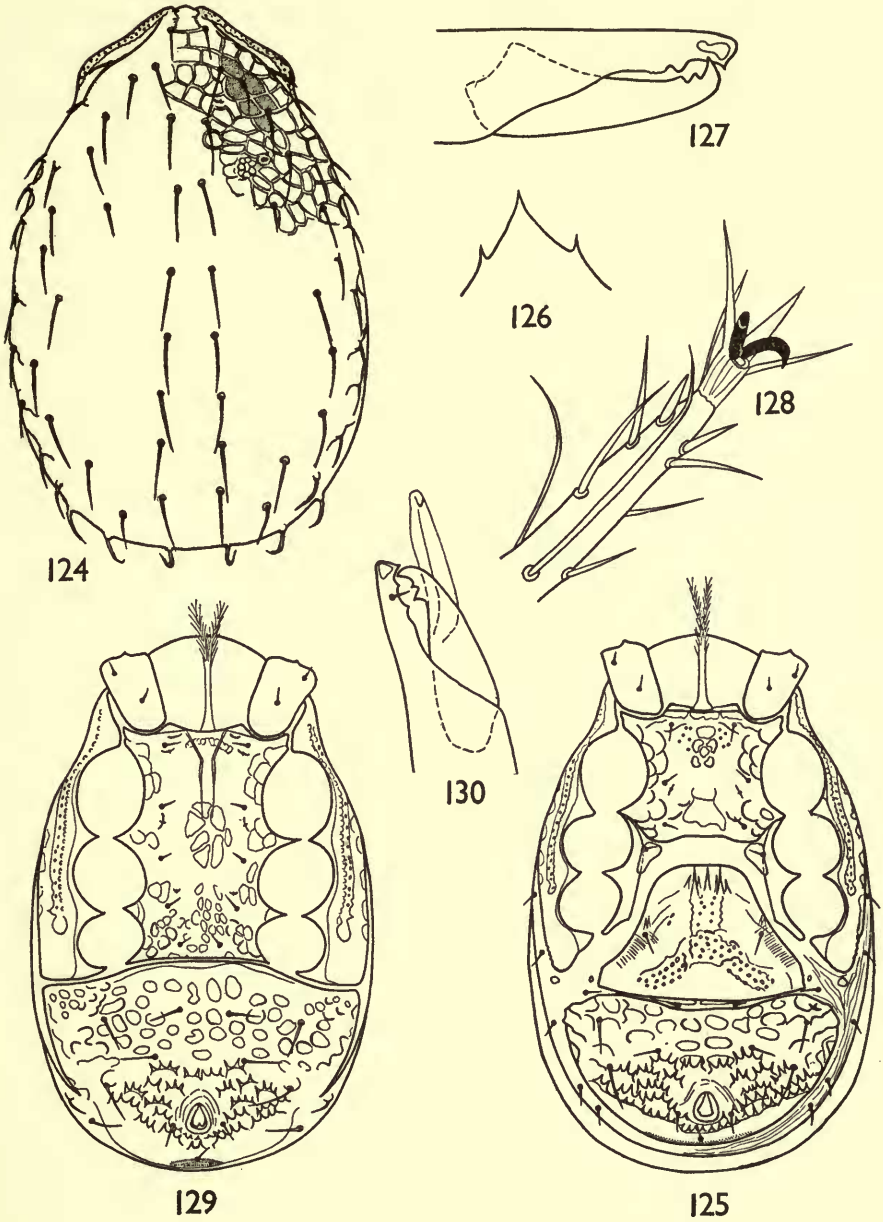
Tritosternum well developed and flanked at its base by a pair of strong preendopodal shields which abut the sternal shield. Sternal shield characteristically ornate (Text-fig. 125) and bearing three pairs of simple setae. Genital shield approximately in the form of a trapezium, heavily sclerotized and ornate, and bearing a single pair of simple setae. Ventri-anal shield broader than long (88–96 μ long × 172–180 μ wide), concave anteriorly, strongly ornate, and bearing nine simple setae. Between the genital and ventri-anal shields lies a pair of narrow sclerotized platelets. Stigma situated between coxae III and IV and peritreme not extending posterior to the stigma. Peritrematal shield well developed and extending posterior to coxa IV. Metapodal plates small.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum (Text-fig. 126) three-pronged, median prong broad and triangular, lateral prongs small, inconspicuous. Dentition of chelicera as in Text-fig. 127.

Leg I (245–255 μ long) with the tarsus (88–94 μ) twice the length of the tibia (43–45 μ). Setae on tarsus I very fine, ambulacrum short, claws small. Setae of remaining segments stouter. Tarsi II–IV with a pair of lanceolate setae, and ambulacra with three acuminate lobes (Text-fig. 128).

Male. Dorsal shield (276–283 μ long × 180–185 μ wide) with ornamentation and chaetotaxy similar to the female.

Tritosternum of the same form as that of the female. The chaetotaxy and sclerotization of the venter are shown in Text-fig. 129. The gnathosoma and tectum are similar to those of the female. The spermatophoral process is about the same length as the movable digit of the chelicera (Text-fig. 130).



FIGS. 124–130. *Sejus aciculatus* sp. nov. Fig., 124 dorsal shield of female. Fig. 125, venter of female. Fig. 126, tectum of female. Fig. 127, chelicera of female. Fig. 128, tarsus II of female. Fig. 129, venter of male. Fig. 130, chelicera of male.

Leg I (281 μ long) with the tarsus (81 μ) twice the length of the tibia (38 μ). The chaetotaxy and ambulacra of the legs are as in the female.

Locality. Jamaica, B.W.I. The holotype female (1959.1.20.124), allotype male (1959.1.20.125), seven female and three male paratypes (1959.1.20.126–133) from damp leaf litter at St. Ann, Mt. Diablo, 1,500 ft. and 2,200 ft., 3.vi.1956, collected by P. F. Bellinger. A male and female paratype have been returned to the collector.

Sejus antillanus sp. nov.

Female. Dorsal shield (333–443 μ long × 195–278 μ wide) slightly attenuated in its posterior half, and entirely covered by a reticulated pattern (Text-fig. 131). " Anterior dorsal shield " with twenty-one pairs of simple setae, verticals almost contiguous and directed anteriorly. " Posterior dorsal shield " with fifteen pairs of simple setae ; J5 are the shortest. The distribution and relative lengths of the setae, and the ornamentation of the dorsal shield are shown in the Text-fig.

Tritosternum well developed with pilose laciniae. Sternal shield with a reticulated area anteriorly and bearing three pairs of simple setae (Text-fig. 132). Genital shield truncated posteriorly, reticulated, and bearing a single pair of setae. Ventri-anal shield broader than long (76–101 μ long × 101–114 μ wide), reticulated, with nine simple setae of which one pair is long. Between the genital and ventri-anal shields lies a row of four small narrow sclerotized plates, and behind these a pair of smaller plates. Stigma situated between coxae III and IV ; no post-stigmal prolongation of the peritreme. Peritrematal shield extending posterior to coxae IV. Metapodal shields small.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum (Text-fig. 133) three-pronged. The dentition of the chelicera is shown in Text-fig. 134.

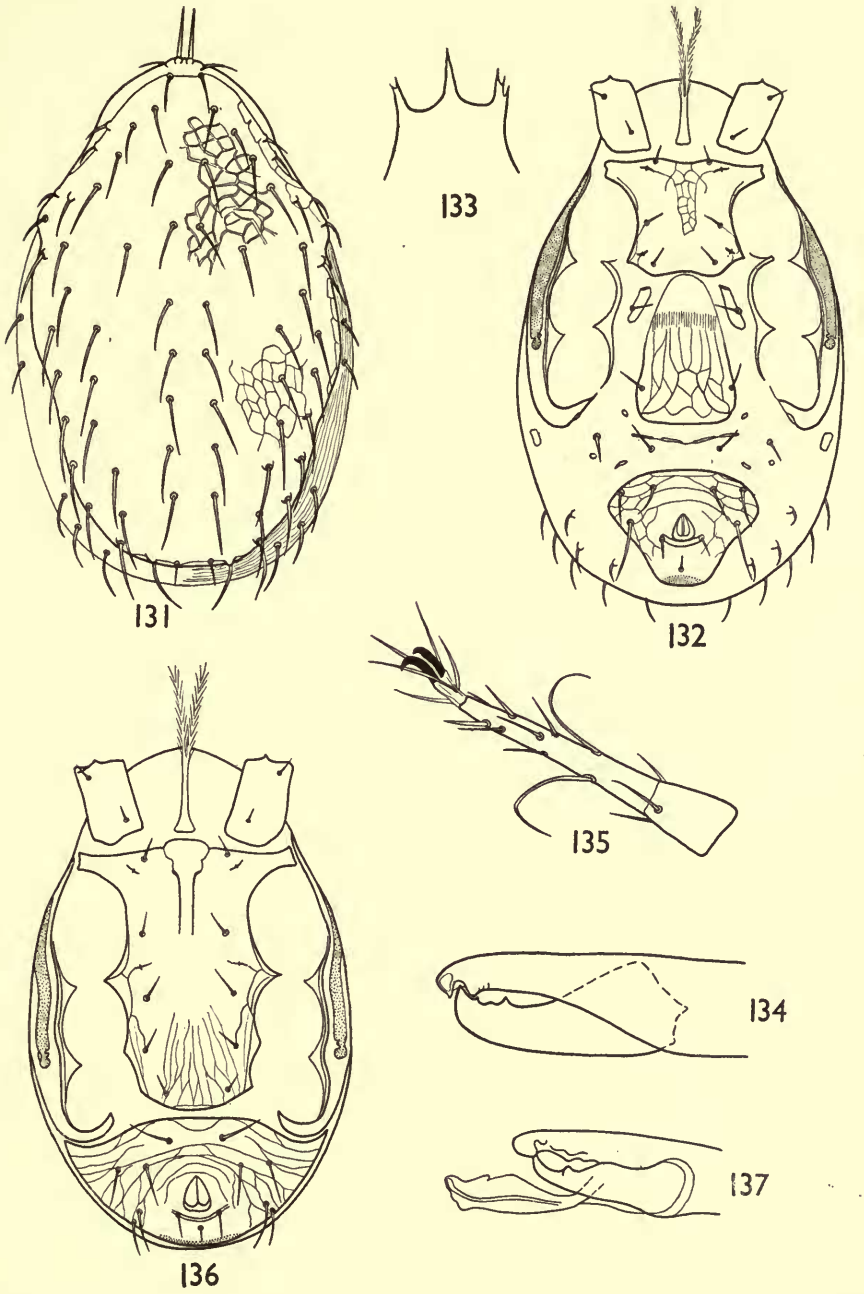
Leg I (384–521 μ long) with the tarsus (86–139 μ) slightly longer than the tibia (78–114 μ). Setae on tarsus and tibia fine, those on remaining segments stouter ; claws on leg I small. Tarsi II–IV with a pair of lanceolate setae and ambulacra with acuminate lobes (Text-fig. 135). Leg IV (532–797 μ) considerably longer than the idiosoma, with the tarsus 203–316 μ long.

Male. Dorsal shield (236–303 μ long × 147–203 μ wide) having similar chaetotaxy and ornamentation to the female.

The chaetotaxy and sclerotization of the venter are shown in Text-fig. 136. The gnathosoma and tectum are similar to those of the female. The spermatophoral process is about one-and-a-half times the length of the movable digit (Text-fig. 137).

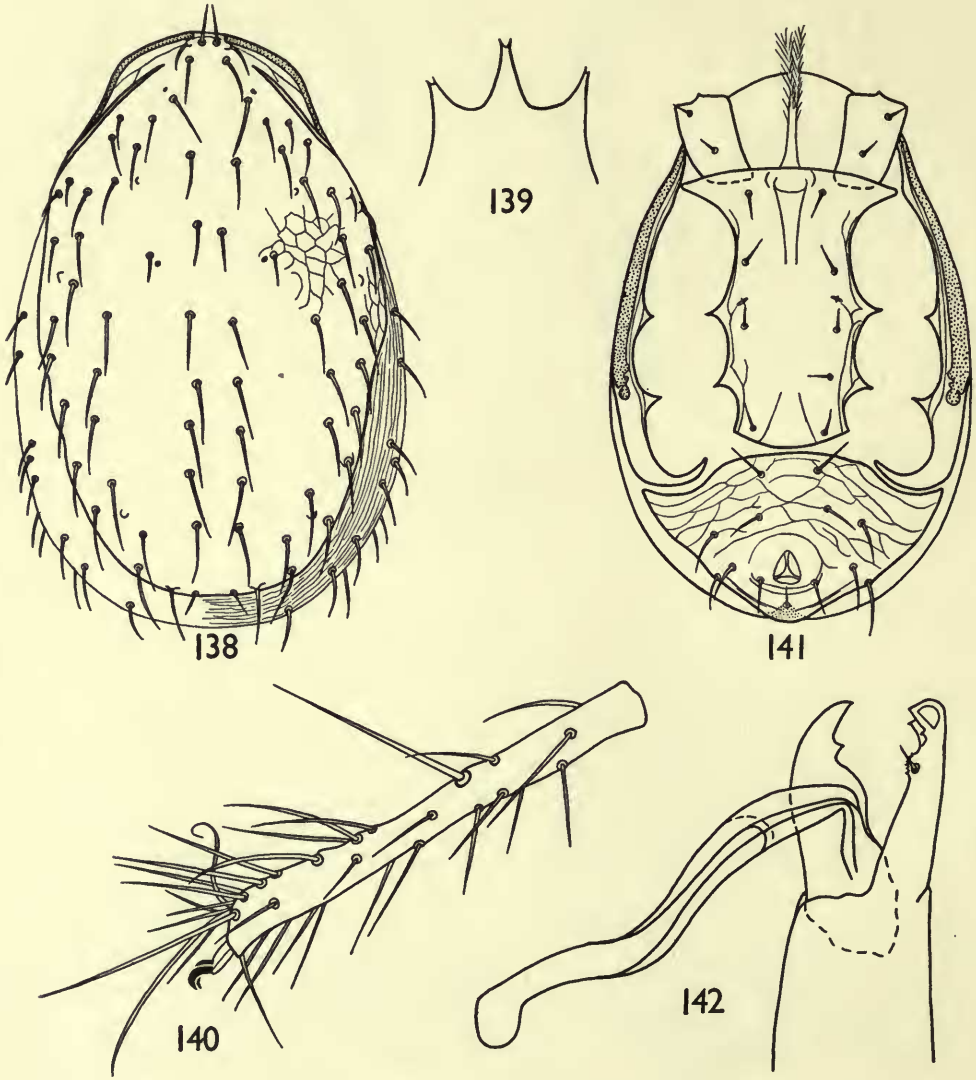
Leg I (238–432 μ long) with the tarsus (76–116 μ) longer than the tibia (63–88 μ). Leg IV (448–658 μ long) with the tarsus 170–253 μ. The chaetotaxy and ambulacra of the legs are as in the female.

Locality. Jamaica, B.W.I. The holotype female (1959.1.20.134) and four paratype females (1959.1.20.135–138) from damp leaf litter, Mt. Diablo, St. Ann, 2,200 ft., 7.vi.1956 ; the allotype male (1959.1.20.139) and five paratypes (3♂♂,



FIGS. 131–137. *Sejus antillanus* sp. nov. Fig. 131, dorsum of female. Fig. 132, venter of female. Fig. 133, tectum of female. Fig. 134, chelicera of female. Fig. 135, tarsus II of female. Fig. 136, venter of male. Fig. 137, chelicera of male.

2♀♀) (1959.1.20.140–144) from damp leaf litter in wood, Dolphin Head, Hanover, 1,780 ft., 13.iv.1956; three paratypes (1♂, 2♀♀) in moss, St. Thomas, John Cove Mountains, 2,300 ft., 25.v.1956; and ten paratypes (1♂, 9♀♀) (1959.1.20.145–154) from leaf litter, Portland Gap, 8.iii.1956. All were collected by P. F. Bellinger. A male and two female paratypes have been returned to the collector.



FIGS. 138–142. *Sejus bellingeri* sp. nov. Fig. 138, dorsum of female. Fig. 139, tectum of female. Fig. 140, tarsus I of female. Fig. 141, venter of male. Fig. 142, chelicera of male.

Sejus bellingeri sp. nov.

FEMALE. Dorsal shield (467–507 μ long × 299–310 μ wide) slightly attenuated in its posterior half, and covered by a reticulated pattern (Text-fig. 138). " Anterior dorsal shield " with twenty-one pairs of simple setae ; verticals closely situated and directed anteriorly. " Posterior dorsal shield " with fifteen pairs of simple setae of which J5 are the shortest. The distribution and relative lengths of the setae and the ornamentation of the dorsal shield are shown in the Text-fig.

The chaetotaxy and sclerotization of the venter are essentially the same as in *Sejus nodosus* (p. 85). The ventri-anal shield measures 119–139 μ long × 132–156 μ wide.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum (Text-fig. 139) three-pronged, and chelicerae typical of the genus.

Leg I (c. 589 μ long) with the tarsus (c. 157 μ) longer than the tibia (c. 126 μ). Tarsus I with a strong erect seta dorsally (Text-fig. 140), remaining setae fine ; tarsal claws small but conspicuous. Tarsi II–III with a pair of lanceolate setae (tarsus IV has only one such seta), ambulacra with three acuminate lobes. Leg IV (c. 913 μ) longer than the idiosoma. Tarsus IV (303–341 μ) markedly elongate and three times the length of the tibia.

MALE. Dorsal shield (347 μ long × 228 μ wide) not attenuated in its posterior half, lightly reticulated. The chaetotaxy of the dorsal shield is the same as that of the female.

The chaetotaxy and ornamentation of the venter are shown in Text-fig. 141. The gnathosoma and tectum are similar to those of the female. Spermatophoral process about twice the length of the movable digit of the chelicera (Text-fig. 142).

Leg I (481 μ long) with the tarsus (126 μ) longer than the tibia (99 μ). Tarsus I with a strong erect seta dorsally as in the female. Leg IV (675 μ long) longer than the idiosoma, and with the tarsus (265 μ) three times the length of the tibia (88 μ).

LOCALITY. Jamaica, B.W.I. The holotype female (1959.1.20.155), allotype male (1959.1.20.156) and one paratype female from pine and hardwood litter, St. Thomas, Portland Gap, 5,500 ft., 8.iii.1956, collected by P. F. Bellinger. The paratype has been returned to the collector.

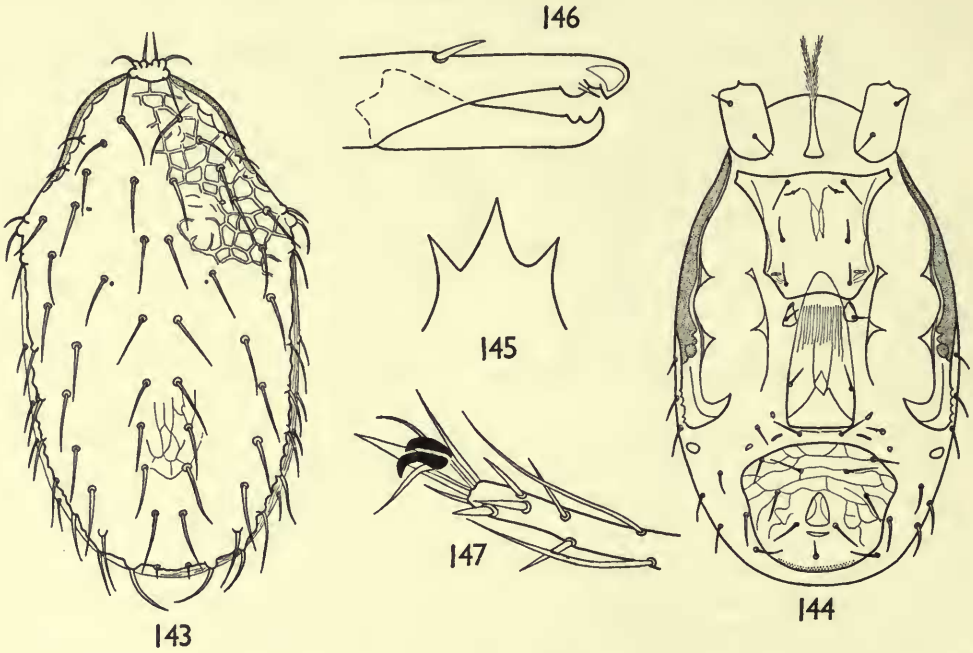
Sejus hulli sp. nov.

FEMALE. Dorsal shield (359 μ long × 195 μ wide) completely covered by a conspicuous reticulated pattern (Text-fig. 143). " Anterior dorsal shield " with twenty-one pairs of simple setae, verticals on a prominent protuberance and directed anteriorly. " Posterior dorsal shield " with fifteen pairs of simple setae, J5 are short. All setae arise from small protuberances. The distribution and relative lengths of the dorsal setae and the ornamentation of the dorsal shield are shown in the Text-fig.

Tritosternum well developed with pilose laciniae. Sternal shield with a very faint

reticulated area medially, and bearing three pairs of simple setae (Text-fig. 144). Genital shield bearing a single pair of setae. Ventri-anal shield a little broader than long (94 μ long $\times$ 114 μ wide), reticulated and bearing nine simple setae. Between the genital and ventri-anal shields lie about six small sclerotized plates. Stigma situated between coxae III and IV; no distinct post-stigmal prolongation of peritreme; peritrematal shield extending posterior to coxa IV. Metapodal plates small.

Venter of gnathosoma with rostral and internal seta on palptrochanter long,



Figs. 143–147. *Sejus hulli* sp. nov., female. Fig. 143, dorsum. Fig. 144, venter. Fig. 145, tectum. Fig. 146, chelicera. Fig. 147 tarsus II.

whip-like. All setae on pedipalp simple. Tectum (Text-fig. 145) three-pronged. The dentition of the chelicera is shown in Text-fig. 146.

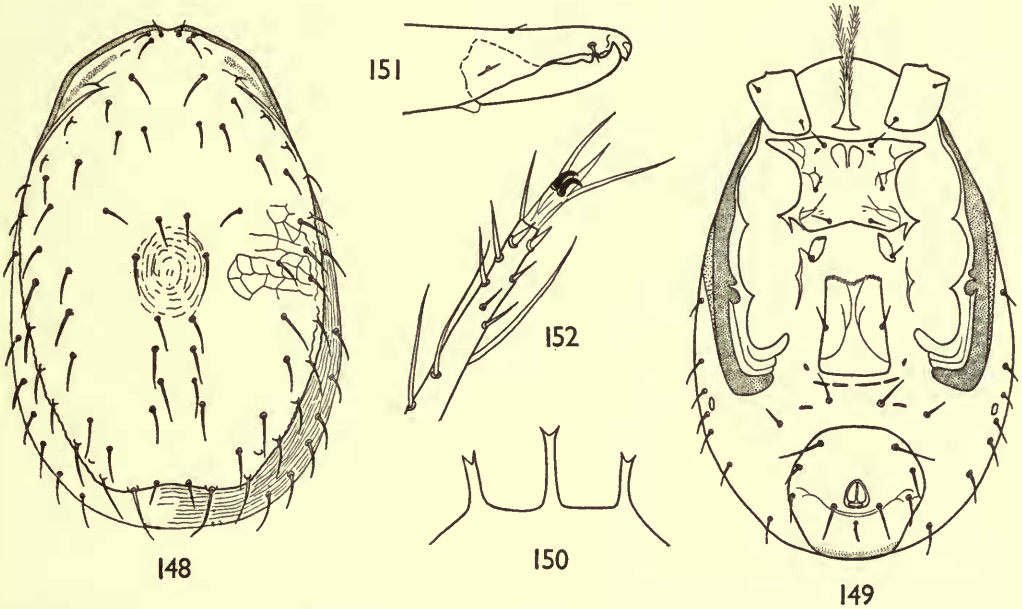
Leg I (360 μ) with the tarsus (101 μ) nearly twice the length of the tibia (56 μ). Setae on tarsus and tibia fine, those on remaining segments stouter. Claws on leg I minute, tarsus swollen in its distal third. Tarsi II–IV with a pair of lanceolate setae, and ambulacra with acuminate lobes (Text-fig. 147).

Male. Unknown.

Locality. Jamaica, B.W.I. A single female (1959.1.20.157) collected in *Lycopodium* at Fairy Glade, St. Andrew, 6.xii.1956, by P. F. Bellinger.

Sejus jamaicensis sp. nov.

Female. Dorsal shield (477 μ long × 310 μ wide) concave posteriorly and covered with a light reticulated pattern (Text-fig. 148). " Anterior dorsal shield " with twenty-one pairs of simple setae ; verticals well separated, short, and arising from weak bases. " Posterior dorsal shield " with fifteen pairs of simple setae of which J5 are the shortest. The distribution of the dorsal setae and the ornamentation of the dorsal shield are shown in the Text-fig.



Figs. 148–152. *Sejus jamaicensis* sp. nov., female. Fig. 148, dorsum. Fig. 149, venter. Fig. 150 tectum. Fig. 151, chelicera. Fig. 152, tarsus II.

Tritosternum well developed with pilose laciniae. Sternal shield with a little sculpturing and two circular areas anteriorly (Text-fig. 149), and bearing three pairs of simple setae. Genital shield with one pair of simple setae. Ventri-anal shield wider than long (114–119 μ long × 139–144 μ wide), bearing nine simple setae, and only lightly sculptured. Between the genital and ventri-anal shields lie a row of four narrow platelets and, posterior to these, two smaller ones. Stigma situated between coxae III and IV ; peritreme extending posterior to coxa IV. Metapodal plates very small.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum (Text-fig. 150) three-pronged. The dentition of the chelicera is shown in Text-fig. 151.

Leg I (924 μ long) with the tarsus (215 μ) only slightly shorter than the tibia (228 μ). Setae on tarsus, tibia and genu very fine ; those on remaining segments

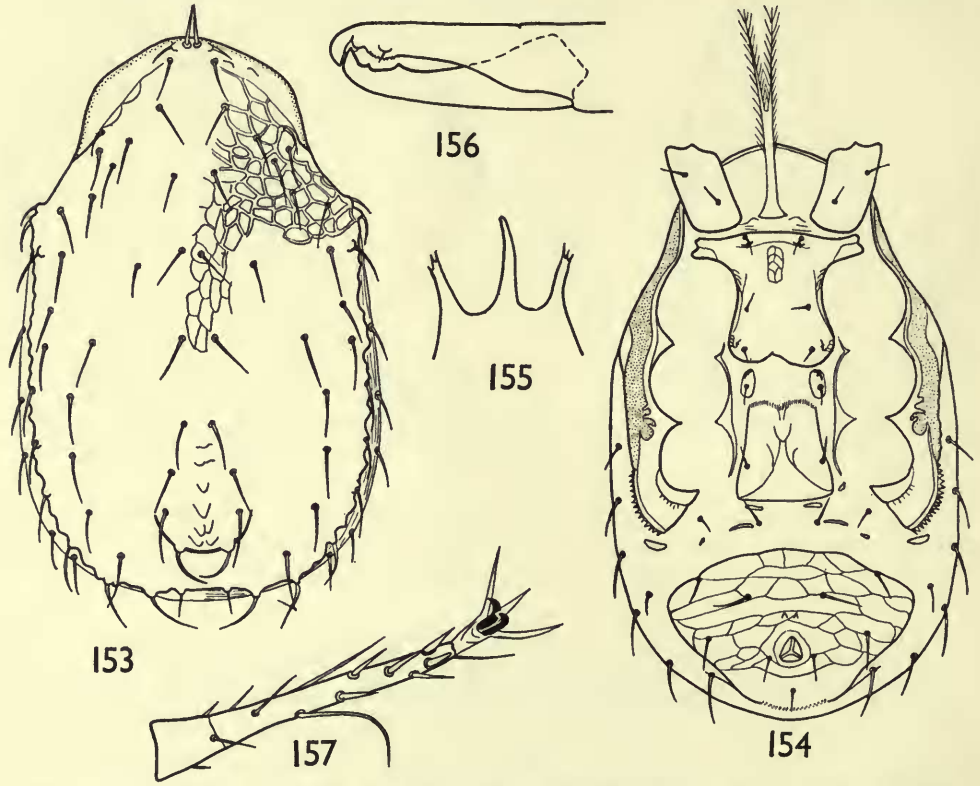
stouter. Claws minute, sessile. Tarsi II–IV with a pair of lanceolate setae; ambulacra with three acuminate lobes (Text-fig. 152).

MALE. Unknown.

LOCALITY. Jamaica, B.W.I. The holotype female (1959.1.20.158) and one paratype female from wet leaves in spray zone, Cape Crow Falls, St. Andrew, 31.iii.1956, collected by P. F. Bellinger. The paratype has been returned to the collector.

Sejus neborealis sp. nov.

FEMALE. Dorsal shield (570 μ long × 330–340 μ wide) entirely covered by a strong reticulated pattern, and with a sclerotized tubercle in the region of setae



FIGS. 153–157. *Sejus neborealis* sp. nov., female. Fig. 153, dorsum. Fig. 154, venter. Fig. 155, tectum. Fig. 156, chelicera. Fig. 157, tarsus II.

J3–J4 (Text-fig. 153). "Anterior dorsal shield" with twenty-one pairs of simple setae, vertical setae contiguous and directed anteriorly. "Posterior dorsal shield" with fifteen pairs of simple setae, J4 situated on the margin of the sclerotized tubercle. The distribution and relative lengths of the dorsal setae, and the ornamentation of the dorsal shield are shown in the Text-fig.

Tritosternum well developed with pilose laciniae. Sternal shield with a small median reticulated area anteriorly, and bearing three pairs of short simple setae (Text-fig. 154). Genital shield slightly convex posteriorly and bearing one pair of simple setae. Ventri-anal shield broader than long (172–177 μ long × 240–253 μ wide), wholly reticulated and bearing nine simple setae. Between the genital and ventri-anal shields lie four sclerotized platelets. Stigma situated between coxae III and IV with the posterior prolongation of the peritreme extending in line with the middle of coxa IV. Peritrematal shield well developed, extending posterior to coxa IV, and crenate externally. Metapodal plates small.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum (Text-fig. 155) three-pronged. The dentition of the chelicera is shown in Text-fig. 156.

Leg I (734–774 μ long) with the tarsus (228–243 μ) approximately twice the length of the tibia (114–126 μ). Some setae on tarsus I relatively long and standing at right angles to the segment ; ambulacrum short, claws small (and inconspicuous) ; setae of remaining segments stouter. Tarsi II–IV with a pair of lanceolate setae and ambulacrum with three acuminate lobes (Text-fig. 157).

Male. Unknown.

Locality. Jamaica, B.W.I. The holotype female (1959.1.20.158) and three paratype females (1959.1.20.159–160) collected in moss on concrete, Coolsbade, Portland, 17.vii.1956, by P. F. Bellinger. One paratype has been returned to the collector.

Sejus nodosus sp. nov.

Female. Dorsal shield (518–529 μ long × 310 μ wide) slightly attenuated in its posterior half, and covered by a reticulated pattern (Text-fig. 158). There is a pronounced sclerotized tubercle in the region of setae J3–J4. " Anterior dorsal shield " with twenty-one pairs of simple setae ; vertical setae closely situated and anteriorly directed. " Posterior dorsal shield " with twenty-one pairs of simple setae, of which J5 are the shortest. The distribution and relative lengths of the setae and the ornamentation of the dorsal shield are shown in the Text-fig.

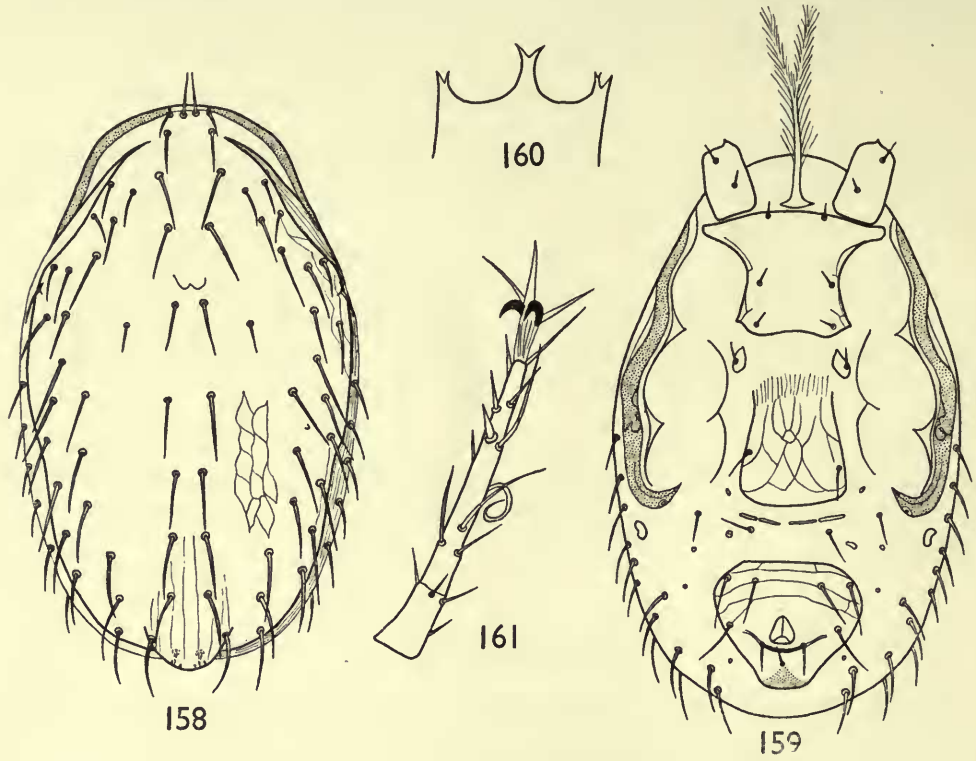
Tritosternum well developed and with pilose laciniae. Sternal shield plain and bearing three pairs of simple setae (Text-fig. 159). Genital shield slightly convex posteriorly, reticulated, and bearing a single pair of setae. Ventri-anal shield wider than long (114–116 μ long × 134–144 μ wide), lightly sculptured and bearing nine simple setae. Between the genital and ventri-anal shields lies a row of two to four narrow sclerotized platelets. Stigma situated between coxae III and IV ; peritreme not extending posterior to the stigma. Metapodal plates small.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum (Text-fig. 160) three-pronged, and chelicerae typical of the genus.

Leg I (c. 620 μ long) with the tarsus (165 μ) longer than the tibia (126 μ). Tarsus I with a strong erect spine dorsally, remaining setae fine ; tarsal claws small but

conspicuous. Tarsi II–III with a pair of acuminate lobes (Text-fig. 161.) Leg IV is about 913 μ long, with the tarsus 392 μ long, markedly elongate, and three times as long as the tibia.

MALE. Unknown.



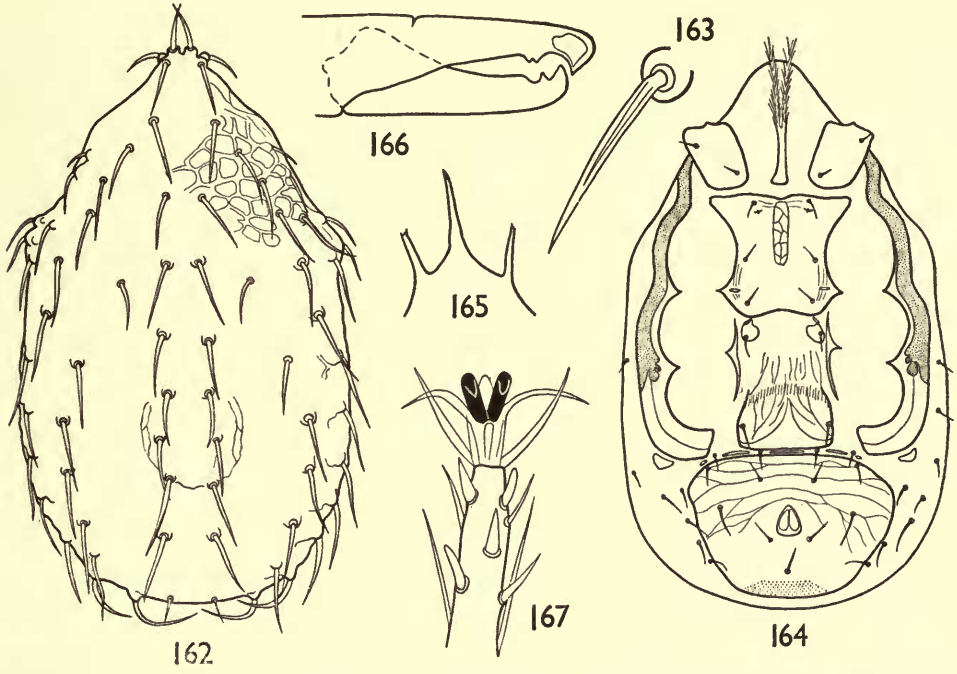
FIGS. 158–161. *Sejus nodosus* sp. nov., female. Fig. 158, dorsum. Fig. 159, venter. Fig. 160, tectum. Fig. 161, tarsus II.

LOCALITY. Jamaica, B.W.I. The holotype female (1959.1.20.161) and one paratype from moss on concrete, Coolsbade, Portland, 17.vii.1955, collected by P. F. Bellinger. The paratype has been returned to the collector.

Sejus browningi sp. nov.

FEMALE. Dorsal shield (330–354 μ long × 190–210 μ wide) very heavily reticulated (Text-fig. 162). "Anterior dorsal shield" with twenty-one pairs of setae; "posterior dorsal shield" with fifteen pairs of setae. Dorsal setae J5 are short and simple, but the remainder are lanceolate (Text-fig. 163). The highest part of the dorsal shield is in the region of setae J1–J3. The vertex is produced anteriorly. The distribution and relative lengths of the dorsal setae are shown in Text-fig. 162.

Tritosternum with a pair of pilose laciniae. Sternal shield with a narrow longitudinal reticulated area anteriorly (Text-fig. 164) and bearing three pairs of simple setae. Genital shield broad, truncated posteriorly, lightly striated and bearing a single pair of simple setae. Ventri-anal shield wider than long (99–101 μ long $\times$ 121–139 μ wide), lightly reticulated anteriorly, and bearing nine simple setae. A row of five narrow sclerotized plates lies on the membrane between the genital and ventri-anal shields. Stigma situated between coxae III and IV, with the peritreme



FIGS. 162–167. *Sejus browningi* sp. nov., female. Fig. 162, dorsal shield. Fig. 163, dorsal seta. Fig. 164, venter. Fig. 165, tectum. Fig. 166, chelicera. Fig. 167, tarsus II.

extending only a short distance posterior to the stigma. Peritrematal shield extending posterior to coxa IV. Metapodal shields triangular and situated close to the peritrematal shield.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum (Text-fig. 165) three-pronged and typical of the genus. The dentition of the chelicera is shown in Text-fig. 166.

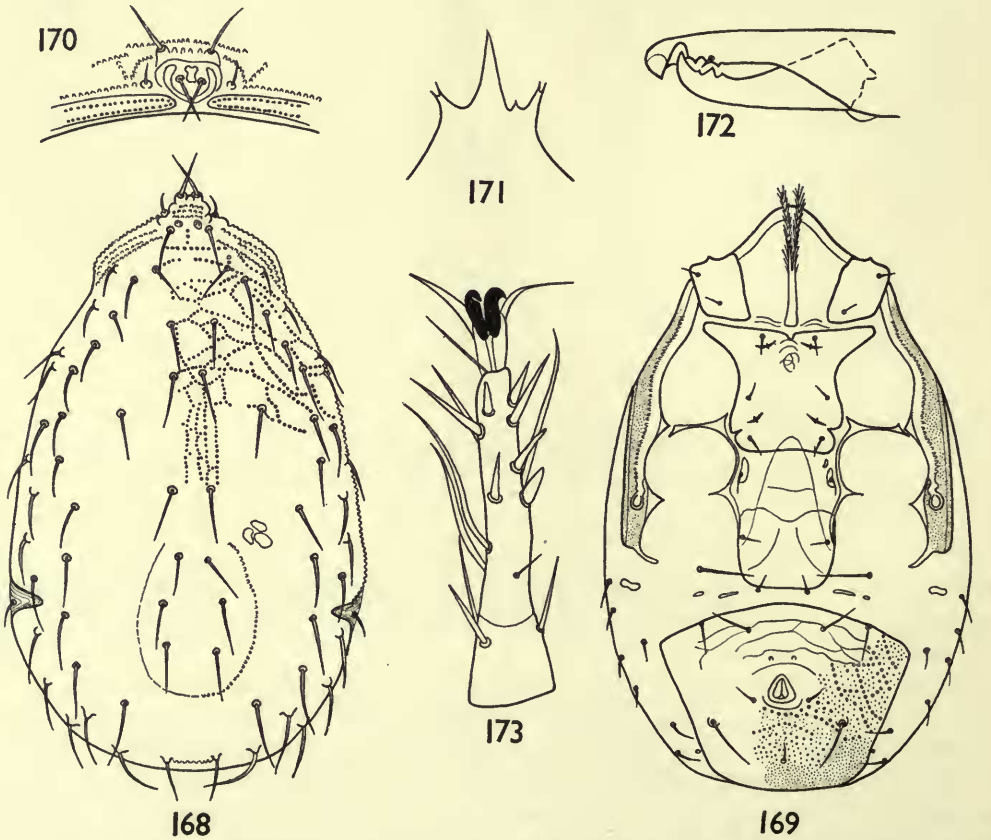
Leg I (320–340 μ long) with the tarsus (88 μ) longer than the tibia (58 μ). Setae on tarsus I very fine ; those on remaining segments somewhat stouter. Tarsus I is swollen in its distal third ; without ambulacrum. Tarsi II–IV with a pair of lanceolate setae, and ambulacra with lateral lobes acuminate ; median lobe strongly produced and rounded apically (Text-fig. 167).

MALE. Unknown.

LOCALITY. Sikkim and Argentina. The holotype female (1959.1.20.162) and two paratype females (1959.1.20.163–164) from leaves and leaf-mould in a wood on steep hillside, Chungtang, Sikkim, 5,120 ft., 16.ii.1952, collected by Dr. Theresa Clay ; and another paratype female (1959.1.20.165) from rotting vegetable matter, Tucumán City, Argentina, 500 m., January, 1953, collected by Dr. P. Wygodzynsky.

Sejus ornatus sp. nov.

FEMALE. Dorsal shield (395–400 μ long $\times$ 245–253 μ wide) with lateral incisions between setae S2 and S3, and covered by a network of small tubercles (Text-fig. 168). Highest part of dorsal shield in the region of setae J1–J3. " Anterior dorsal shield " with twenty-two pairs of simple setae ; " posterior dorsal shield " with fifteen pairs of simple setae. Setae J5 are long. Vertex of dorsal shield produced ante-



FIGS. 168–173. *Sejus ornatus* sp. nov., female. Fig. 168, dorsum. Fig. 169, venter. Fig. 170, vertex. Fig. 171, tectum. Fig. 172, chelicera. Fig. 173, tarsus II.

riorly. The distribution and relative lengths of the dorsal setae and the ornamentation of the dorsal shield are shown in the Text-fig.

Tritosternum well developed, with pilose laciniae. Sternal shield with a circular impression antero-medially and bearing three pairs of simple setae (Text-fig. 169). Genital shield broad, truncated posteriorly, and bearing a single pair of setae. Ventri-anal shield wider than long (118–139 μ long × 164–177 μ wide), ornamented with small tubercles and punctations and bearing nine simple setae. Stigma situated between coxae III and IV ; peritremes not joined anteriorly (Text-fig. 170), and not extending posterior to the stigmata. Outer margin of peritreme crenate ; peritrematal shield extending to the posterior level of coxa IV. Metapodal shields narrow and transversely situated.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum (Text-fig. 171) three-pronged, typical of the genus. The dentition of the chelicera is shown in Text-fig. 172.

Leg I (360–366 μ long) with the tarsus (103–113 μ) longer than the tibia (58–63 μ). Setae on tarsus I very fine ; those on remaining segments stouter. Tarsi II–IV with a pair of lanceolate setae, and ambulacra with lateral lobes acuminate, median lobe rudimentary (Text-fig. 173). Tarsus I slightly swollen at its distal half, pulvillus and claws small.

Male. Unknown.

Locality. Argentina. The holotype female (1959.1.20.166) and three paratypes (1959.1.20.167–169) from horse dung and decomposing vegetable matter in forest, Quebrada de los Sosa, Tafí, Tucumán, 1,300 m., 17.v.1953, collected by Dr. P. Wygodzynsky.

Sejus tuberculatus sp. nov.

Female. Dorsal shield (477–518 μ long × 310–330 μ wide) minutely punctured and slightly concave posteriorly (Text-fig. 174). " Anterior dorsal shield " with twenty-one pairs of simple setae. " Posterior dorsal shield " with fifteen pairs of simple setae ; J5 are the shortest. The distribution and relative lengths of the setae, and the ornamentation of the dorsal shield are shown in the Text-fig.

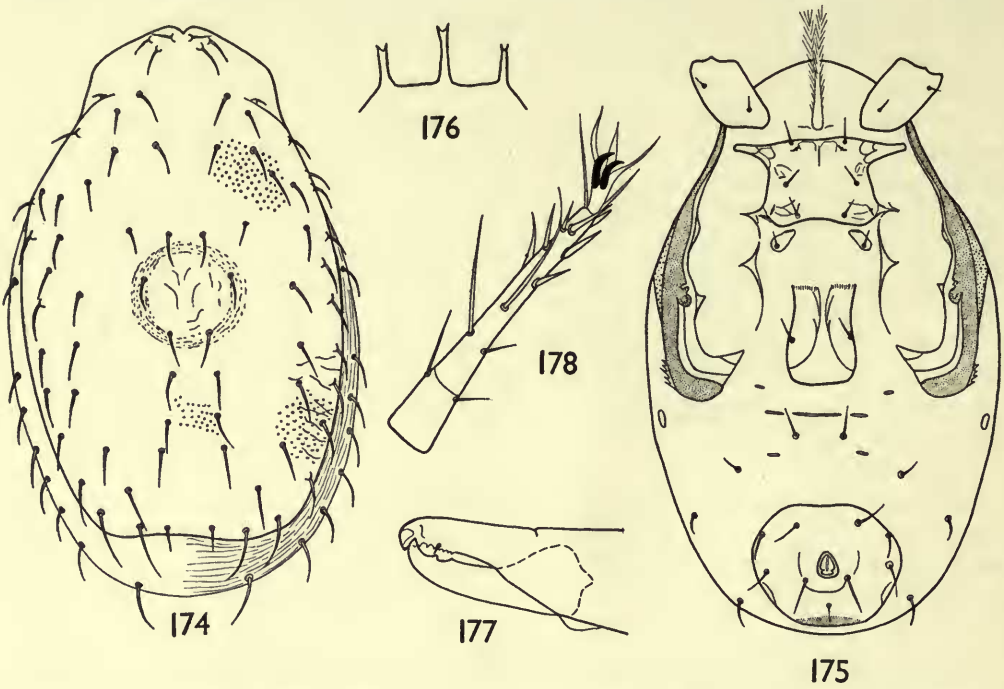
Tritosternum well developed and with pilose laciniae. Sternal shield with faint sculpturing, and bearing three pairs of simple setae (Text-fig. 175). Genital shield flask-shaped, and bearing a single pair of setae. Ventri-anal shield almost circular in outline (130–144 μ long × 144–147 μ wide) and bearing nine simple setae. Between the genital and ventri-anal shields lies a transverse row of about three narrow plates, and posterior to these lie two small plates. Stigma situated between coxae III and IV ; peritreme and peritrematal shields extending posterior to coxa IV. Metapodal plates small.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum (Text-fig. 176) three-pronged. The dentition of the chelicera is shown in Text-fig. 177.

Leg I (794–804 μ long) with the tarsus (162–177 μ) shorter than the tibia (182–

197 μ). Setae on tarsus, tibia and genu fine; those on other segments stouter; tarsal claws minute, inconspicuous. Tarsi II–IV with a pair of lanceolate setae; ambulacra with three acuminate lobes (Text-fig. 178).

MALE. Unknown.



FIGS. 174–178. *Sejus tuberculatus* sp. nov., female. Fig. 174, dorsum. Fig. 175, venter. Fig. 176, tectum. Fig. 177, chelicera. Fig. 178, tarsus II.

LOCALITY. Argentina. The holotype female (1959.1.20.170) and two paratype females (1959.1.20.171.172) from decaying vegetable matter in forest, Quebrada de los Sosa, Tafí, Tucumán, 13.v.1953, 1,300 m., collected by Dr. P. Wygodzynsky.

The following species also appear to belong to the genus *Sejus*, but with the exception of *Episeius groenlandicus*, have not been examined by us:

Acarus tendens Schrank, 1803. *Fauna Boica*, **3** : 209. Oudemans (1929) considers this species to be synonymous with *Platyseius subglaber* (Ouds.).

Gamasus scabriculus Nordmann, 1832. *Mikr. Beitr. Naturg. wirbell. Thiere* : 85.

Epicrius glaber Berlese, 1886. *A.M.S.*, 30, *No.* 9. Italy.

Hypoaspis scutulis Banks, 1914. *Psyche*, **21** : 161. Brazil.

Lasioseius borealis var. *temperatus* Berlese, 1916. *Redia*, **12** : 34. Palermo.

Lasioseius grandis Berlese, 1916. *Tom. cit.* : 34. Piemonte, Venice.

Lasioseius parapodicus Berlese, 1916. *Tom. cit.* : 35. Java.

Lasioseius similis Berlese, 1916. *Tom. cit.* : 35. Italy. This species may be a

synonym of *Sejus serratus* (Halbert).

Lasioseius mutilus Berlese, 1916. *Tom. cit.* : 37. Florence.

Lasioseius (*Cheiroseius*) *alpestris* Berlese, 1916. *Tom. cit.* : 41. Italy.

Episeius major incisus Willmann, 1938. *Ann. Hist. nat. Mus. Hung.*, **31** : 168. Hungary.

Episeius groenlandicus Haarløv, 1942. *Medd. Grønland*, **128** : 18. Greenland.

Episeius aequalis Schweizer, 1949. *Rés. Rech. sci. Parc Nat. Suisse, N.F.* **2** : 64. Switzerland.

Episeius handschini Schweizer, 1949. *Tom. cit.* : 71. Switzerland.

Episeius salicorniae Willmann, 1949. *Veröff. Mus. Nat. Bremen, No.* 1*A* : 118. Poland.

Episeius longipes Willmann, 1951. *SB. öst. Akad. Wiss., Abt.* 1, **160** : 112. Austria.

Platyseius mackerassae Womersley, 1956. *J. Linn. Soc. Lond.* (*Zool.*) **42** : 552. Queensland.

Genus ***ZERCONOPSIS*** Hull

Zerconopsis Hull, J. E., 1918, *Trans. nat. Hist. Soc. Northumb.*, **5** : 65.

Platyseiine mites with the " posterior dorsal shield " bearing fourteen pairs of setae comprising five pairs in the J and the Z series but only four pairs in the S series (S2 being situated on the lateral interscutal membrane). Three to five pairs of dorsal setae stout and paddle-like (Text-figs. 179, 192). Lateral margins of the shield entire or incised anterior to S1. Sternal shield in the female with three pairs of setae ; metasternals situated on platelets. Genital shield wedge shaped, genital setae situated on or off the shield. Ventri-anal shield large and bearing from three to seven pairs of setae in addition to the three setae normally associated with the anus. Male with sterniti-genital and free ventri-anal shield. Peritreme without post-stigmatic process ; peritrematal shield poorly developed posterior to coxa IV. Chaetotaxy of the venter of the gnathosoma and of the pedipalps typical of the subfamily. Chelicerae chelate-dentate, movable digit in the male with a short spermatophoral process ; tectum basically three-pronged. Legs I–IV with a well-developed ambulacrum ; median lobes of pulvilli rounded apically.

Type species ***Gamasus remiger*** Kramer, 1876

Key to Species—Adults

1. Dorsal shield with distinct lateral incisions anterior to S1 (Text-figs. 184 and 197) 2
—Lateral margins of the dorsal shield entire 3
2. Genital shield in the female narrow, without setae (Text-fig. 198). Labrador
Z.l abradorensis sp. n. (p. 99)
—Genital shield in the female broad, with a pair of setae (Text-fig. 185). Switzerland
Z. muestairi (Schweizer) (p. 94)
3. Dorsal shield with five pairs of paddle-like setae (Text-fig. 192) ; genital shield without setae (Text-fig. 193). Hungary . . *Z. decemremiger* sp. n. (p. 96)

—Dorsal shield with three pairs of paddle-like setae (Text-figs. 179 and 189) ; genital shield with or without setae 4

4. Genital shield with a pair of setae (Text-fig. 180) ; with one pair of large, subtriangular metapodal shields. Europe . . . . . *Z. remiger* (Kramer) (p. 92)

—Genital shield narrow, without setae (Text-fig. 190) ; with two pairs of metapodal shields. England . . . . . *Z. michaeli* sp. n. (p. 95)

Zerconopsis remiger (Kramer)

Gamasus regimer Kramer, P., 1876, *Arch. Naturg.*, **42** : 93.
Ameroseius bispinosus Berlese, A., 1910, *Redia*, **6** : 253.

Female. Dorsal shield (570–630 μ long × 310–382 μ wide) covered anterolaterally with a distinct reticulated pattern ; posterior and central areas with a lighter network (Text-fig. 179). " Anterior dorsal shield " with twenty-two pairs of setae of which one pair is paddle-like, the remainder simple ; verticals short, each on a tubercle. " Posterior dorsal shield " with fourteen pairs of setae of which two pairs are paddle-like and the remainder simple ; J5 are the shortest. The distribution and relative lengths of the dorsal setae and the ornamentation of the dorsal shield are shown in Text-fig. 179.

Tritosternum with a narrow base and pilose laciniae, and flanked by a narrow pair of pre-endopodal shields. Sternal shield with a fine granular pattern and bearing three pairs of simple setae (Text-fig. 180). Genital shield also with granular markings, and bearing one pair of setae. Ventri-anal shield wider than long (220–223 μ long × 225–303 μ wide), heavily reticulated and bearing thirteen simple setae. Between the genital and ventri-anal shields lie six platelets. Stigma situated between coxae III and IV with the peritreme not extending posterior to the stigma. Metapodal plates conspicuous.

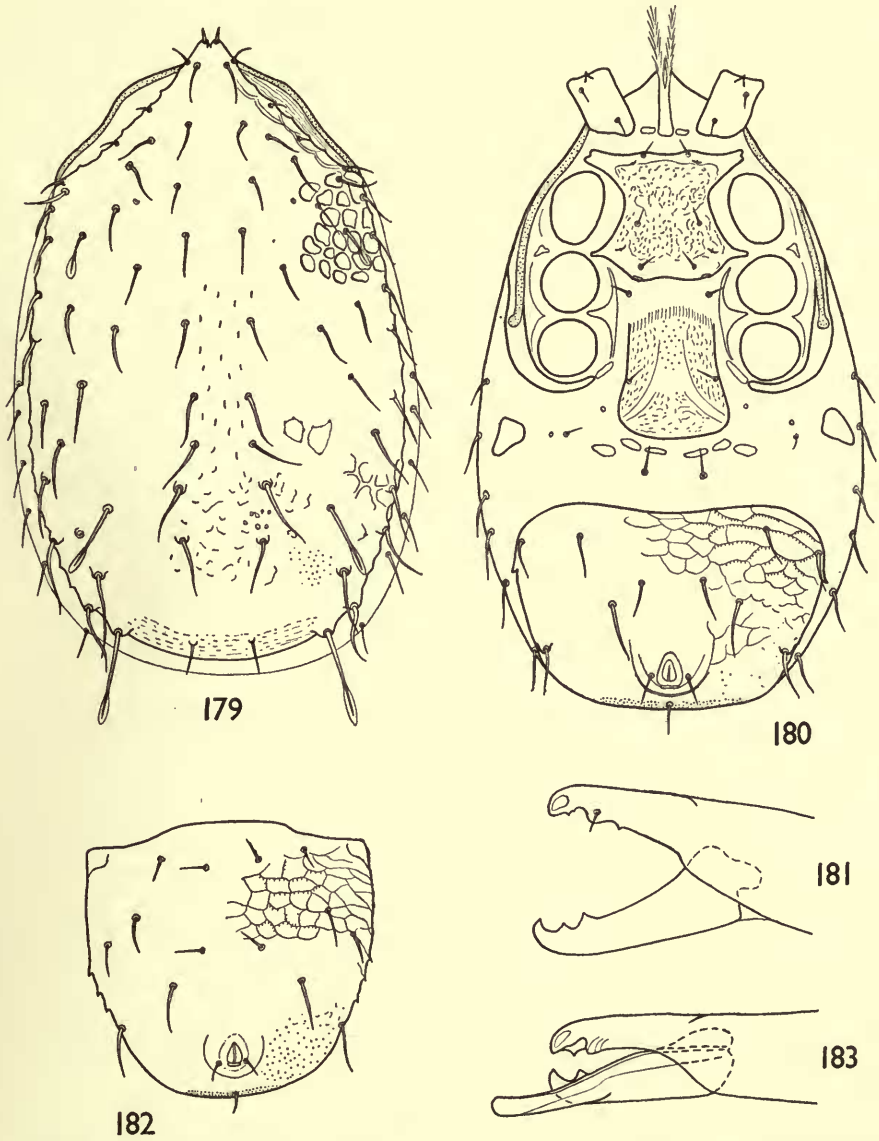
Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged and typical of the genus. The dentition of the chelicera is shown in Text-fig. 181.

Leg I (379–400 μ long) with the tarsus (99–103 μ) longer than the tibia (63–68 μ) ; claws small, pulvillus short. Tarsus I smooth with fine setae ; tibia, genu and femur with majority of setae arising from strong tubercles. Tarsi II–IV with a pair of lanceolate setae ; ambulacra with median lobes of pulvilli rounded apically.

Male. Dorsal shield (530–550 μ long × 299–310 μ wide) with chaetotaxy and ornamentation similar to the female. Sterniti-genital shield with five pairs of simple setae. Ventri-anal shield (Text-fig. 182) reticulated anteriorly and bearing seventeen simple setae. The gnathosoma, tectum, pedipalps and legs are similar to those of the female. Leg I (c. 420 μ long) with the tarsus (99 μ) and the tibia (68 μ). Spermatophoral process about a third as long again as the movable digit of the chelicera (Text-fig. 183).

Distribution. Kramer (1876) described this species from under fallen leaves without giving a locality, and Berlese (1910) described *Ameroseius bispinosus* from rotting leaves at Palermo. We have examined specimens from Nadap, Herkules-

fürdo, and Gyertyánliget in Hungary, and British specimens from Goyt Valley, Cheshire, 24.xi.1940, collected by H. Britten; Rydal Water, Westmorland, 29.xi.1954, collected by M. E. Bacchus; Harefield, Middlesex, 22.i.1956, collected by A. H. G. Alston; and Avonmouth, Gloucestershire, 11.v.1957, collected by P. N. Lawrence.

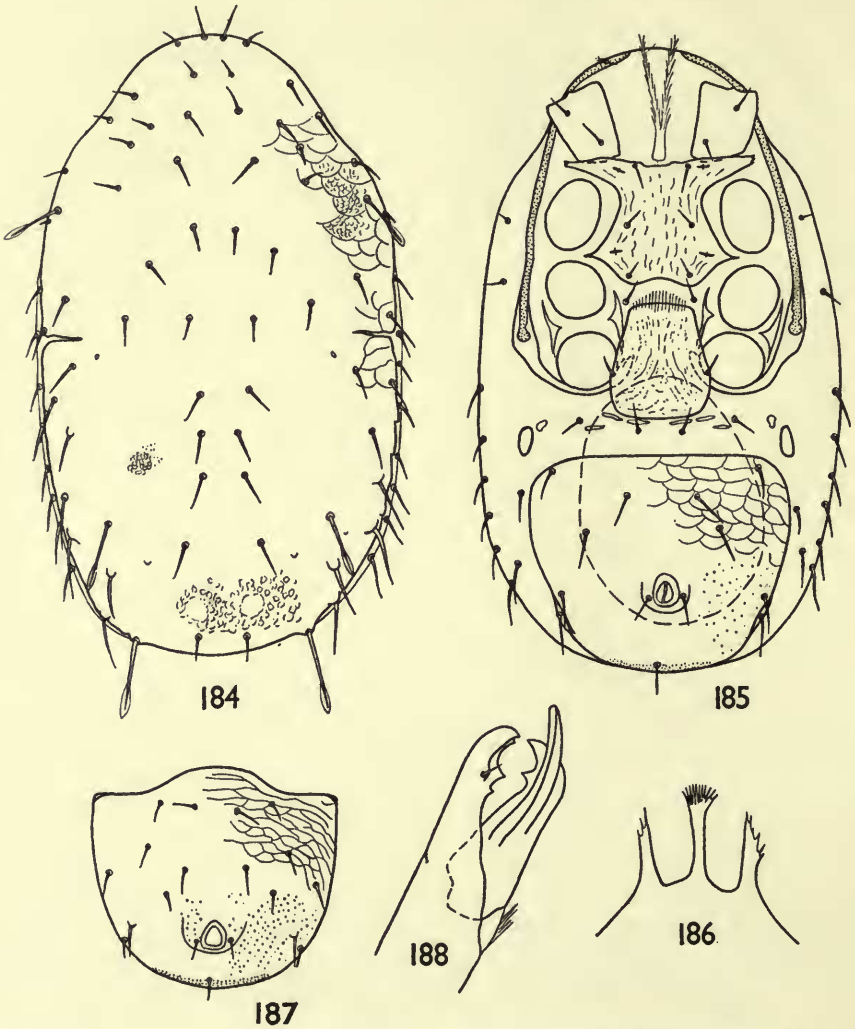


FIGS. 179–183. *Zerconopsis remiger* (Kramer). Fig. 179, dorsum of female. Fig. 180, venter of female. Fig. 181, chelicera of female. Fig. 182, ventri-anal shield of male. Fig. 183, chelicera of male.

Zerconopsis muestairi (Schweizer) comb. nov.

Lasioseius müstairi Schweizer, J., 1949, *Réc. Rech. sci. Parc Nat. Suisse N.F.* **2** : 50.

Female. Dorsal shield (585–630 μ long × 315–378 μ wide) with a lateral incision anterior to seta S1 ; lightly reticulated anteriorly and entirely granular (Text-fig. 184). " Anterior dorsal shield " with nineteen pairs of setae of which one pair is paddle-like, remainder simple ; verticals relatively long and well separated. " Posterior dorsal shield " with fourteen pairs of setae of which two pairs are paddle-like,



Figs. 184–188. *Zerconopsis muestairi* (Schweizer). Fig. 184, dorsum of female. Fig. 185, venter of female. Fig. 186, tectum of female. Fig. 187, ventri-anal shield of male. Fig. 188, chelicera of male.

the remainder simple ; J5 are the shortest. The distribution and relative lengths of the dorsal setae and the form of the dorsal shield are shown in the Text-fig.

Tritosternum with a narrow base and pilose laciniae. Sternal shield with faint sculpturing and bearing three pairs of simple setae (Text-fig. 185). Genital shield also with faint markings, and bearing a single pair of setae. Ventri-anal shield wider than long (180–223 μ long × 240–270 μ wide), reticulated in its anterior half and bearing thirteen simple setae. Between the genital and ventri-anal shields lie six platelets. Stigma situated between coxae III and IV with the peritreme not extending posterior to the stigma. Metapodal plates small.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum (Text-fig. 186) three-pronged and typical of the genus. The chelicerae are figured by Schweizer (1949).

Leg I (432–504 μ long) with the tarsus (118–132 μ) longer than the tibia (68–75 μ). Claws on leg I distinct, pulvillus small ; tarsal setae fine, those on other segments stouter. Tarsi II–IV with a pair of lanceolate setae ; median lobes of pulvilli rounded apically.

Male. Dorsal shield (467–498 μ long × 252–289 μ wide) with chaetotaxy and ornamentation similar to the female. Sterniti-genital shield with five pairs of simple setae. Ventri-anal shield with nineteen simple setae (Text-fig. 187). The gnathosoma, tectum, pedipalps and legs are typical. Leg I (326–332 μ long) with the tarsus 108–116 μ and the tibia 63–65 μ. The spermatophoral process and chelicera are shown in Text-fig. 188.

Locality. This species is known only from the Swiss National Park. We have examined five females and three males from the type series.

Zerconopsis michaeli sp. nov.

Female. Dorsal shield (498 μ long × 253 μ wide) with a heavy distinct pattern of depressions ; lateral margins irregular, posterior margin crenate (Text-fig. 189). " Anterior dorsal shield " with nineteen pairs of setae of which one pair is paddle-like, the remainder simple ; verticals on tubercles and directed anteriorly. " Posterior dorsal shield " with fourteen pairs of setae of which two pairs are paddle-like, the remainder simple. The distribution of the setae and the structure and ornamentation of the dorsal shield are shown in the Text-fig.

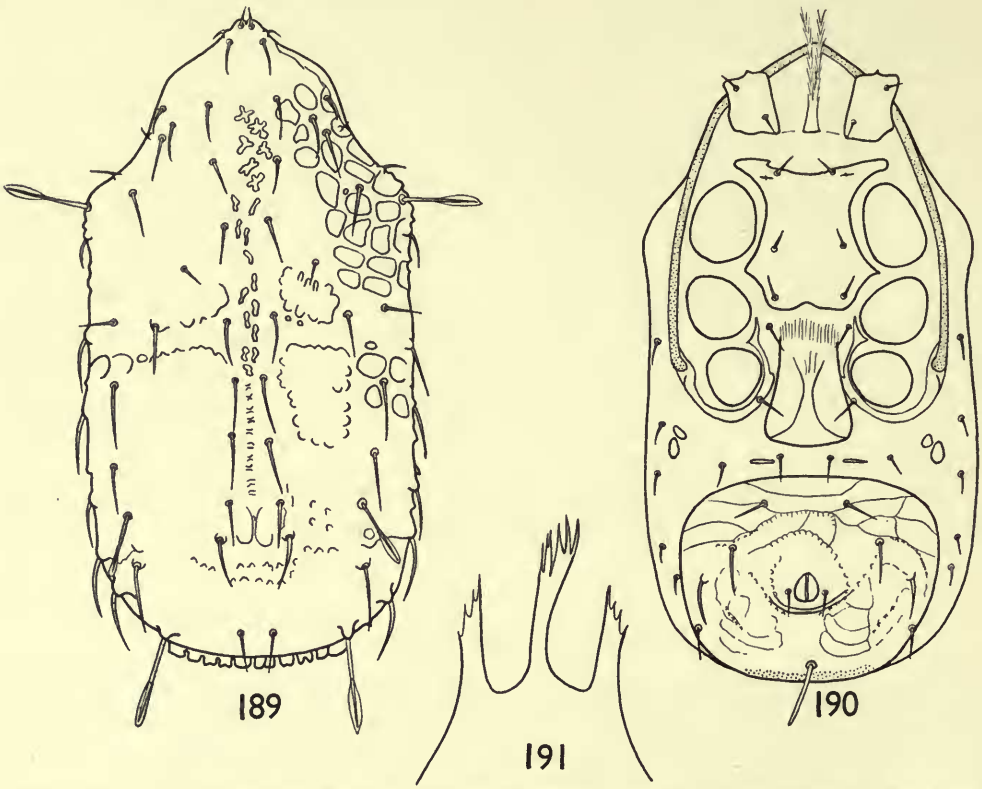
Tritosternum with a narrow base and pilose laciniae. Sternal shield plain, bearing three pairs of simple setae (Text-fig. 190). Genital shield narrow, setae off the shield. Ventri-anal shield wider than long (160 μ long × 212 μ wide), with a pattern of reticulations and dots, and bearing eleven setae of which the post-anal is long and stout. There are at least two narrow sclerotized platelets between the genital and ventri-anal shields. Stigma situated between coxae III and IV ; no post-stigmal prolongation of the peritreme. Metapodal plates small.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum (Text-fig. 191) three-pronged and typical of the genus. Chelicerae typical.

Leg I (387 μ long) with the tarsus (101 μ) almost twice the length of the tibia (58 μ). Legs II–IV incomplete in the unique specimen, but some of the setae arise from tubercles.

Male. Unknown.

Locality. A single female (1930.8.25.1840) from " England " in the A. D. Michael Collection and labelled " *Sejus remiger* Kramer ".

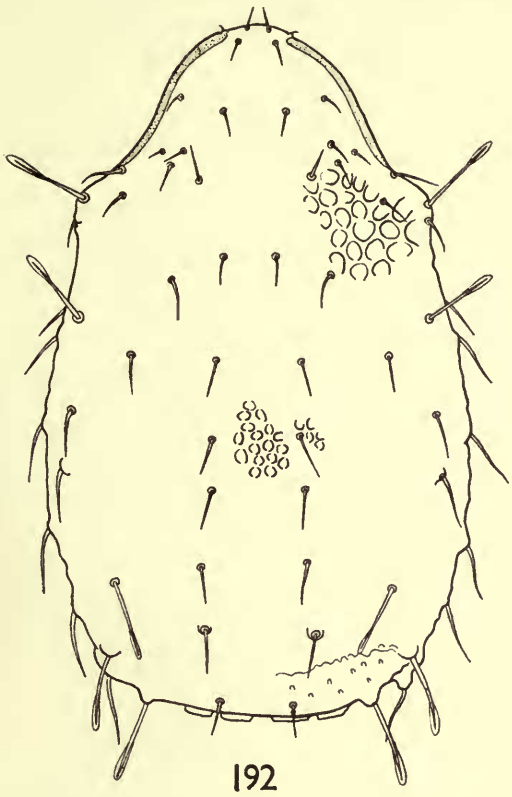


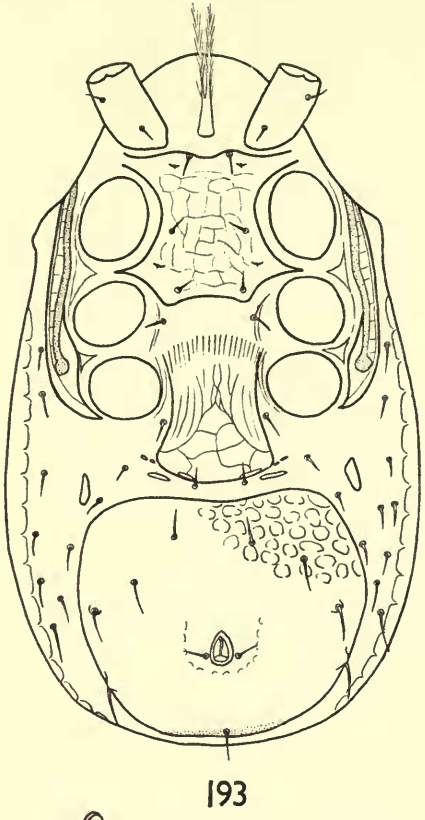
Figs. 189–191. *Zerconopsis michaeli* sp. nov., female. Fig. 189, dorsal shield. Fig. 190, venter. Fig. 191, tectum.

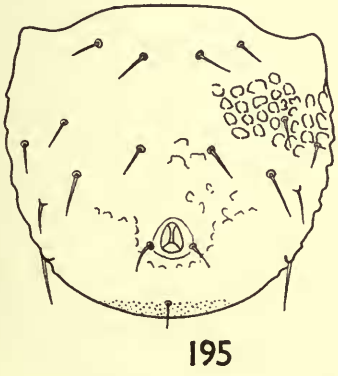
Zerconopsis decemremiger sp. nov.

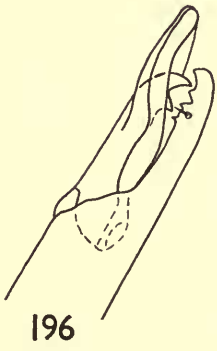
Female. Dorsal shield (590–600 μ long × 360–382 μ wide) with a dense pattern of depressions, largest around the anterior margin and becoming smaller posteriorly (Text-fig. 192). " Anterior dorsal shield " with twenty pairs of setae of which two pairs are paddle-like, the remainder simple ; verticals separated by about three times the diameter of their bases. " Posterior dorsal shield " with fourteen pairs of setae of which three pairs are paddle-like ; J5 are the shortest. The distribution of the setae and the ornamentation of the dorsal shield are shown in the Text-fig.

Tritosternum with a narrow base and pilose laciniae. Sternal shield with faint









FIGS. 192–196. *Zerconopsis decemremiger* sp. nov. Fig. 192, dorsal shield of female. Fig. 193, venter of female. Fig. 194, tectum of female. Fig. 195, ventri-anal shield of male. Fig. 196, chelicera of male.

reticulations and bearing three pairs of simple setae (Text-fig. 193). Genital shield reticulated; genital setae off the shield. Ventri-anal shield wider than long (205–220 μ long × 253–263 μ wide), with a conspicuous pattern of small depressions and bearing eleven simple setae. Between the genital and ventri-anal shields lie four small plates. Stigma situated between coxae III and IV; peritreme without post-stigmal prolongation. Metapodal plates small.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum three-pronged and typical of *Zerconopsis* (Text-fig. 194): chelicerae also typical.

Leg I (434 μ long) with the tarsus (111–116 μ) longer than the tibia (68–70 μ). Claws on leg I small; tarsal setae fine, those on remaining segments somewhat stouter and arising mainly from small tubercles. Tarsi II–IV with a pair of lanceolate setae. Ambulacra with median lobes of pulvilli rounded apically.

Male. With dorsal shield (507–550 μ long × 289–330 μ wide) essentially the same as the female. Sterniti-genital shield with five pairs of simple setae. Ventri-anal shield (Text-fig. 195) similar in ornamentation to the female and bearing nineteen simple setae. The gnathosoma, tectum, pedipalps and legs are similar to those of the female. Leg I (434 μ long) with the tarsus (111–113 μ) longer than the tibia (68–70 μ). The spermatophoral process and chelicera are shown in Text-fig. 196.

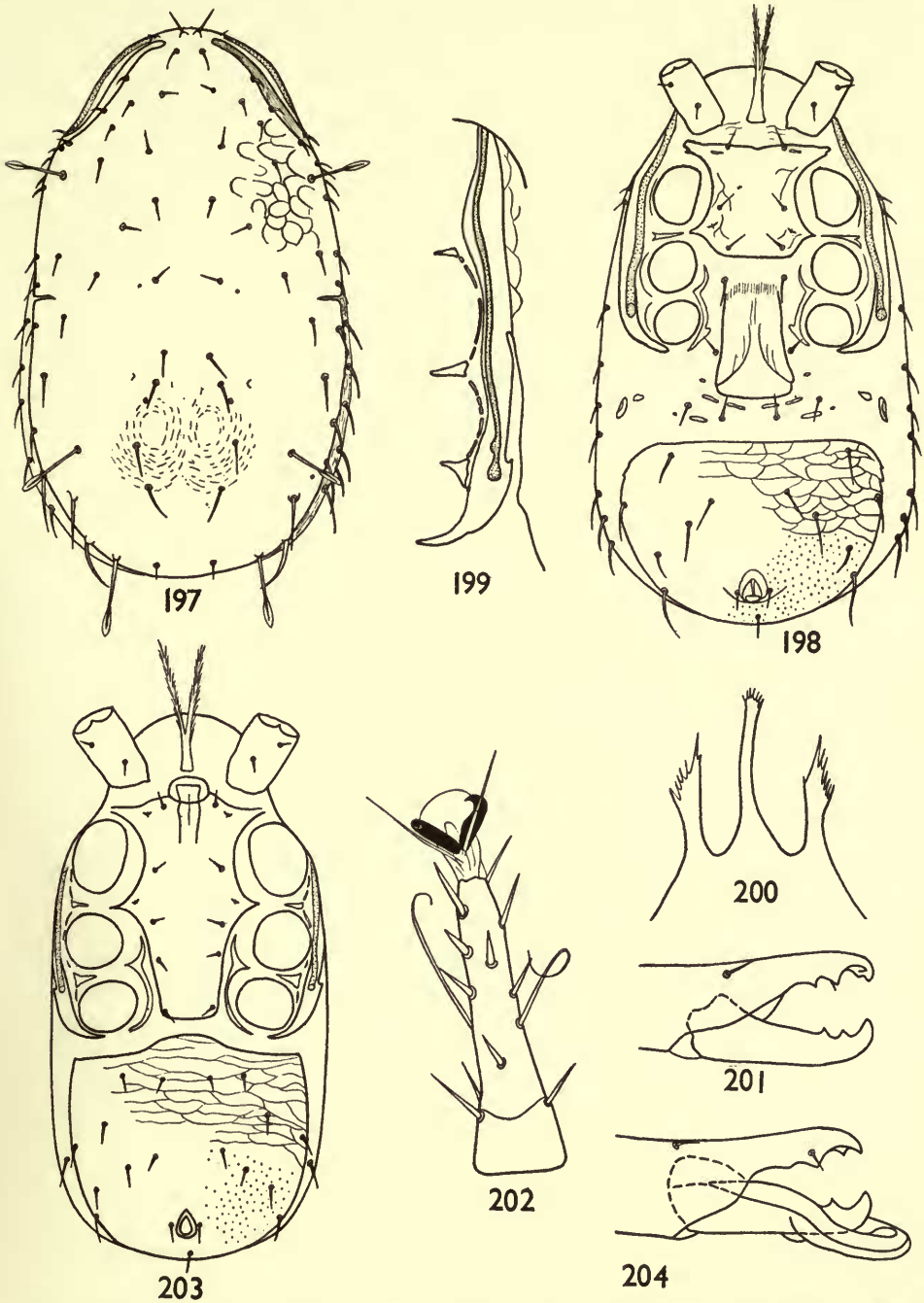
Locality. Hungary. The holotype female (1959.1.20.177), allotype male (1959.1.20.178), four female and two male paratypes (1959.1.20.179–184) from Herkulesfürdo, April–June, 1938; and four female and two male paratypes from Gyertyánliget, 6–17th August, 1940, sent to us by Dr. J. Balogh, Budapest.

Zerconopsis labradorensis sp. nov.

Female. Dorsal shield (581–609 μ long × 299–320 μ wide) with a lateral incision anterior to seta S1, reticulated antero-laterally and the remainder granulate (Text-fig. 197). "Anterior dorsal shield" with twenty-one pairs of setae of which one pair is paddle-like, the remainder simple; vertical setae with their bases two diameters apart. "Posterior dorsal shield" with fourteen pairs of setae of which two pairs are paddle-like; J5 are the shortest. The distribution of the setae and the form of the dorsal shield are shown in the Text-fig.

Tritosternum with a narrow base and a pair of pilose laciniae. Sternal shield almost without markings, and bearing three pairs of simple setae (Text-fig. 198). Genital shield plain; setae off the shield. Ventri-anal shield wider than long (177–215 μ long × 253–260 μ wide), reticulated anteriorly and granulate posteriorly, and bearing fifteen simple setae. Between the genital and ventri-anal shields lie six small sclerotized plates. Stigma between coxae III and IV; peritreme without post-stigmal prolongation (Text-fig. 199). Metapodal plates small.

Venter of gnathosoma with rostral and internal palptrochanter setae long, whip-like. All setae on pedipalp simple. Tectum (Text-fig. 200) three-pronged; chelicerae typical (Text-fig. 201).



FIGS. 197–204. *Zerconopsis labradorensis* sp. nov. Fig. 197, dorsum of female. Fig. 198, venter of female. Fig. 199, peritrematal shield of female. Fig. 200, tectum of female. Fig. 201, chelicera of female. Fig. 202, tarsus II of female. Fig. 203, venter of male. Fig. 204, chelicera of male.

Leg I (462–502 μ long) with the tarsus (124–134 μ) twice the length of the tibia (65–73 μ) ; tarsal claws small ; setae fine, those on remaining segments shorter and stouter. Tarsi II–IV (Text-fig. 202) with a pair of lanceolate setae ; ambulacra with median lobes of pulvilli rounded apically.

MALE. Dorsal shield (488 μ long $\times$ 238 μ wide) essentially the same as in the female. Sterniti-genital shield with five pairs of simple setae. Ventri-anal shield (Text-fig 203) similar in ornamentation to the female and bearing nineteen simple setae. The gnathosoma, tectum, pedipalps and legs are similar to those of the female. Leg I (462 μ long) with the tarsus (124 μ) twice as long as the tibia (65 μ). The spermatophoral process of the chelicera is shown in Text-fig. 204.

LOCALITY. Labrador. The holotype female (1959.1.20.185), allotype male (1959.1.20.186) and six paratype females (1959.1.20.187–192) from wet willow humus, West Carter Basin, 4–17.viii.1958, collected by P. N. Lawrence during the British Schools' Exploring Society Expedition.

SUMMARY

1. This paper deals with the external morphology and classification of the Platyseiinae. Four genera, namely, *Sejus* C. L. Koch (syn. *Cheiroseius*, *Episeius* and *Episeiella*), *Platyseius* Berlese, *Zerconopsis* Hull, and *Plesiosejus* gen. nov. are recognized. Keys are given to the species represented in the Collections of the British Museum (Natural History).

2. The following new synonymy is introduced :

Lasioseius (*Platyseius*) *capillatus* Berl. = *Hypoaspis subglabra* Oudms.
Paraseius tenuipes Halbert = *Ameroseius italicus* Berl.
Episeiella heteropoda Willm. = *Sejus viduus* C. L. Koch
Episeius montanus Willm. = *Ameroseius borealis* Berl.
Episeius ovaspini Schweizer = *Lasioseius* (*Episeius*) *glaber* var. *curtipes* Halbt.
Parasejus glaber var. *minor* Trägårdh = *Epicrius laelaptoides* Berl.
Lasioseius (*Episeius*) *sphagni* Halbt. = *Epicrius laelaptoides* Berl.

3. The following twenty-seven new species are described and figured : *Platyseius jamaicensis* ; *Platyseius spinosus* ; *Plesiosejus horridus* ; *Sejus aciculatus* ; *S. alstoni* ; *S. antillanus* ; *S. areolatus* ; *S. bellingeri* ; *S. browningi* ; *S. cassiteridum* ; *S. clayi* ; *S. dromadis* ; *S. hulli* ; *S. jamaicensis* ; *S. kennedyi* ; *S. neborealis* ; *S. nepalensis* ; *S. nodosus* ; *S. ornatus* ; *S. parbatensis* ; *S. phalangioides* ; *S. signatus* ; *S. spinipes* ; *S. tuberculatus* ; *Zerconopsis decemremiger* ; *Z. labradorensis* and *Z. michaeli*.

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—— 1905. Acari nuovi V. *Ibid.* **2** : 231–238.
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—— 1910. Lista di nuove specie e nuovi generi di Acari. *Ibid.* **6** : 243–271.